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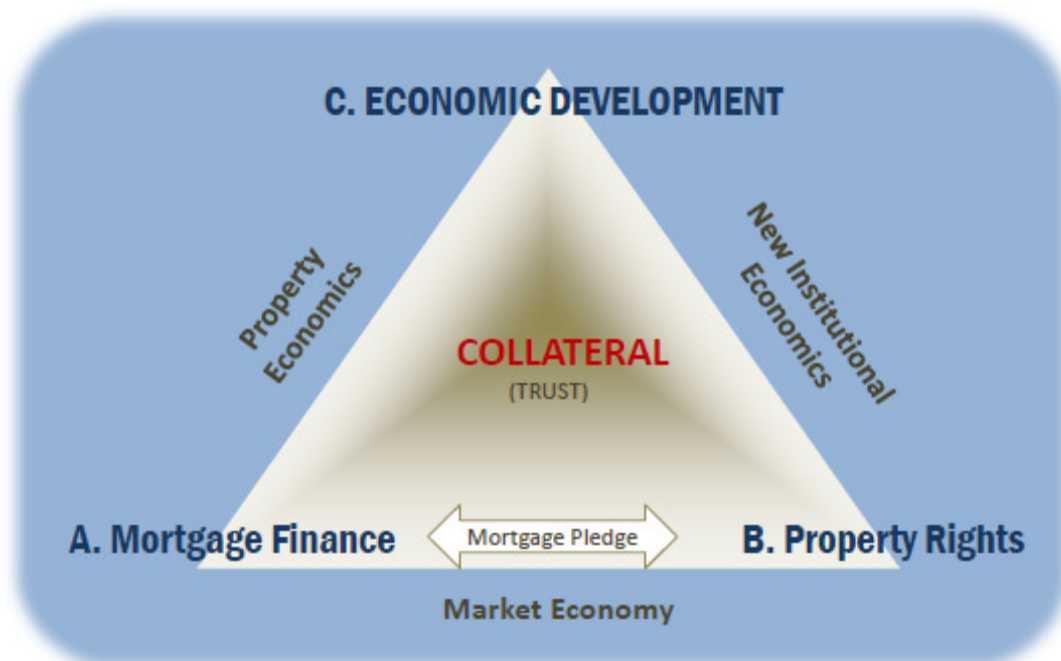
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PART C

COLLATERAL SECURITY OR COLLATERAL DAMAGE



On Mortgage Finance, Property Rights Protection and Economic Development

Submitted as Part C of PhD Dissertation

**'Danish Mortgage Finance,
Property Rights Protection,
and Economic Development'**

**By Karin Haldrup
November 2010**

**Aalborg University in Cooperation with VP Securities A/S
Supervisor: Dr. Tech. Erik Stubkjær, Aalborg University**

Structure of Thesis

VOLUME I:

(printed version)

Part IO. Introduction and Overview

Summary and brief versions of each Part, including discussion of research methodology

Part A. All Credit to the Balance Principle

On Mortgage Credit and its prerequisites

Part B. Property Rights in an Information Void

Property rights, property registration and security of collateral

Part C. Collateral Security or Collateral Damage

On Economic Development, housing finance and property rights protection.
Presentation and discussion of topical theories

VOLUME II:

(printed version)

Part D. Case studies Introduction and Documents

- ◇ Nicaragua Report, documentation
- ◇ Ghana reports & documentation

Appendices

Documentation, Data, Proposed screening formats, and References

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PART C Collateral Security or Collateral Damage

- On Mortgage Finance, Property Rights Protection and Economic Development

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” In order to create a qualitative understanding of the factors polarising the world in growing wealth and growing poverty we need to create **economics by inclusion**, a system where all relevant factors are considered simultaneously. This will bring back the historical/institutional approach to economics that died after World War II. This economics by inclusion will also open the way for **policies of inclusion**, a system that will put the accent on the wellbeing of the majority and not on the growth of the export sector.”

Reinert, 2006, “Evolutionary Economics, Classical Development Economics, and the History of Economic Policy: A Plea for Theorizing by Inclusion.”, p. 19

Erik S. Reinert, Tallinn University of Technology, Estonia and
Norwegian Institute of Strategic Studies (NORISS), Oslo, Norway

1. On the Role of Mortgage Credit and Property Rights in Economic Development

1.1 Introduction and Overview

Economic development, mortgage credit and property rights

The purpose of the present Part is to extract findings from development economics literature to throw light on selected questions raised in Part A and B on economic development, albeit in glimpses as permitted by the limitations of the study. In this way it is strived at strengthening the (theoretical) basis for observations made in Part A and B with reference to the research questions, Appendix 1.

In **Part A** the Danish mortgage finance system was reviewed from different analytical angles to study its core features in interaction over time, in context and in comparison with other mortgage finance systems. On this basis propositions were made on what features of the Danish mortgage finance system were unique to its development story and setting, and what features could possibly transcend time and place.

The 200-year development story of the Danish mortgage finance system gave multiple clues to the role of institutions in its development, and demonstrated the dynamics in the mortgage credit market under changing macro-economic tides. Since the risks of the Danish mortgage credit system are largely reduced to credit risk, security of collateral has always been a central issue, which under full legal protection was seen to primarily depend on collateral value. However, market values fluctuate with overall economic development trends, and property markets are not neutral to financial systems. Indications were found of a two-way transmission process of change between financial system development and property rights infrastructure. Furthermore, there were found indications of the Danish mortgage finance system having contributed to economic development and building of a society with lower inequality through its democratization of credit.

In **Part B** a review was made of information sources on property rights and registration systems around the world in support of developing propositions on a strategy to screening of the readiness for mortgage credit implementation.

The unanimous agreement on the centrality of the property rights regime for mortgage credit, and for economic development in general, was found to be contrasted by the nearly global lack of suitable indicator data on the state of implementation of land registration systems and land management for urban development and mortgage pledging.

The review found current indicators on property rights protection and land management to be fractional at best. Instead, selected macro-level indices and classification systems were applied for proposing a classification system of economies around the world into coarse grouping of readiness for mortgage system development with a top group largely defined based on the World Economic Forum classifications of economies. By segmenting the potential market a diversified approach for feasibility studies was lined out.

The long list of relevant indicators suggested in Part B calls for selection of a few significant indicators to be applied for screening. However, selecting representative indicators depends on either factor analysis or on a theoretical model, both of which were beyond reach in the present study. A smaller set of indicators could possibly be defined for screening, if causal relations justifies so, or if substantive evidence is found in literature on the significance of certain factors for mortgage credit development.

The intriguing relations between property rights and the macro-economy are difficult to quantify, due to lack of information capturing the state of affairs in property rights protection, and few scanty macro-level indices on property rights protection exist. An analysis of macro-level indicators representing 20 countries showed a strong correlation between macro-economic factors of indices of economic development, and of property rights protection.

In **Part C** the analysis goes a step further in order to explore and discuss the factors and dynamics of development through a review of selected topics in literature, thus reviewing mortgage finance and property

rights from the perspective of development economics. Further evidence on causality and development dynamics among these giant phenomena might be helpful in developing strategies for improving mortgage finance around the world, where rapid urbanization and low housing quality create huge unmet housing demands.

On Approach and Methodology in Part C

The topic areas of A. (Danish) Mortgage finance, B. Property rights and land registration, and C. Economic Development, are here seen in conjunction, and are explored in view of the interference amongst them, but with the point of departure in economic development. In this way the three topics provide each their perspective as seen from each vertex of a triangle (A, B, C).

Indeed, it was found impossible to discuss one of the factors without the other. Even when a topical focus was taken in Part A and B, then the two other topics emerged. Inevitably, a deeper exploration of one of these topical areas leads to a discussion of the two others. Mortgage credit is a derivative of property rights, property rights depend on institutions, and economic development depend on institutions and property rights, etc.

It is nothing new that theoretical challenges of property rights pertain to the domain of macro-economics, when regarding land and property as a basic production factor (land, labour, capital), as can be studied in the works of Smith, Marx, etc. A few observations on modern land economics are made to add to that picture.

In a modern version property rights are also the foundations in a market economy in a more complex way, as reflected in macro-economic indicators, see discussion in Part B. The two-way causality of economic development and property rights was confirmed by the macro-economic prerequisites to mortgage market development defined by UNECE (2005), see Part A and B.

Here, it is intended to frame the analysis of mortgage market development by reviewing relationships among the three areas based on a selective literature review, in order to deepen the discussion of the role of the property rights regime in development of mortgage finance, and of the interference of mortgage credit and property rights with economic development.

Possible findings on relations and causality among the three factors in economic development may underpin the indicator design process. The discussion on sequencing in development of property institutions and mortgage market development may also be stimulated, in so far as relations and dynamic mechanisms can be shown. Fundamental and important questions concern triggering mechanisms of economic growth through development of property rights and mortgage financing, and what would be optimal sequencing and strategies. In this way, an agenda can be lined out which by far exceeds this limited study.

The literature review is fractional, but also selected intuitively by taking the point of departure in high profile contributions to the topic and following some threads of the consequent debate. The reviewed sources were picked due to their focus on elements in the political-economic machinery of mortgage finance and land economics with special reference to property rights registration. The analysis starts off with an analysis of basic terms and the nature of the research domain. Next follows a review with discussion of observations on the following topics:

- New Institutional Economics and the role of property rights for economic development;
- The debate on Hernando de Soto's works and ideas on integrating the dead capital into the official economy;
- Property economics and the role of collateral in economic development;
- The property market and the 'sub-prime' crisis, with relations to questions on 'sub-prime' markets in developing economies;

The above issues are discussed both in view of potential observations relevant for indicator development, and of importance for design of reform strategies in the land sector in support of mortgage credit development and economic development.

The question of the role of collateral for economic development is discussed e.g., by a group of economists under the captive name of ‘property economics’, who thereby link property rights and macro-economics. The group is represented below by Steiger and Heinsohn (2008).

The group includes Hernando de Soto, who in ‘The Other Path’ and in ‘The Mystery of Capital’ (2000), argued for the opportunities created for the poor by inclusion into the formal economy. His book (2000) attracted wide attention for its focus on real assets owned by the poor, on its analysis of the roots of poverty, and by its suggested way to climbing out of poverty by mobilization of dead capital.

A rich debate has arisen on formalization of property rights sparked by Hernando de Soto, and by other contribution to the debate on the role of property rights and collateral for economic development, discussed below in Chapter C.5.1.

Finally some observations and comments are added to the sub-prime crisis, because of the instructive evidence on channels of transmission between the mortgage market and economic development, and on what are the fundamentals in credit markets. It is in times of crisis that the nature of mortgage credit systems is tested. Moreover, the challenges of developing mortgage finance in emerging markets carry similarities to sub-prime markets in the US, for which reason possible generalization from the US experience is of relevance (Jaffee, 2008).

What is explored here is how the relation between mortgage finance development and property rights infrastructure is formed in the case of emerging markets with weaker property rights institutions, and how each factor may impact on economic development.

In conclusion, the world wide crisis provides evidence to the causal relations between the topics of property rights, collateral security, credit and economic development, for good and for bad. Some of these topics are discussed below in relation to selected literature.

The basis for the essays is selected literature and theory, which at the same time is orientated towards possible applications, and thus providing guidance for shaping strategies in the area of property institutions.

In this way Part C. can be compared to a mini-cruise through a huge area and picking some points of interest for analysis. The navigation has been guided by a search for evidence on how the three topic areas interface, what are their interrelations, and if it is possible to identify evidence of causality and engines of dynamics.

The following chapters - in their incomplete and opinionated form - are included to add to the debate on how to proceed towards creating positive dynamics in property rights and mortgage credit institutions in support of economic development.

1.2 On the Concept of Economic Development

Concepts and Definition

Economic development is not treated as an independent theoretical topic here, but discussed in conjunction with each of the two main topic areas: Mortgage finance and economic development (A+C), property rights and economic development (B + C); and eventually all three topics in conjunction (A+ B+ C).

Since development economics is a vast field of its own, only some findings have been extracted from selected literature, and these observations are discussed in view of the project questions. However, what has been uncovered during the review is how important both mortgage finance and property rights are to macro-economics.

Theoretical questions on economic development are only included in glimpses – not methodologically – in combination with the topics of property rights and mortgage credit in view of 1. Indicator development, and 2. In support of better understanding the topics of property rights and mortgage credit in development.

Therefore, theories on economic development are predominantly discussed from an application oriented perspective. For this purpose the concepts on economic development as defined by the World Economic Forum (WEFORUM) have served as a reference in an application oriented monitoring framework, as also discussed in Part B.

The WEFORUM framework is built on a multifaceted understanding of economic development as pluralistic, and by the view that economic theories are non-exclusive: Two or more theories may in principle be true at the same time (WEFORUM, GCI-report, 2007-8, Sala-i-Martin, p. 4),

The WEFORUM Global Competitive Index translates advanced economic theory into a model suited for operative purposes of monitoring. The WEFORUM understanding of economic development has been found to suit the project domain, since it represents the professional complexity in each of the topic areas of property rights, institutions and financial systems, while also having reached an operational format, ref. to comments in Chapter B.7.3.

The definition of economic development links economic development with economic growth.

Economic development. Qualitative change and restructuring in a country's economy in connection with technological and social progress. The main indicator of economic development is increasing [GNP per capita](#) (or GDP per capita), reflecting an increase in the economic productivity and average material wellbeing of a country's population. Economic development is closely linked with [economic growth](#).

Economic growth. Quantitative change or expansion in a country's economy. Economic growth is conventionally measured as the percentage increase in [gross domestic product \(GDP\)](#) or [gross national product \(GNP\)](#) during one year. Economic growth comes in two forms: an economy can either grow "extensively" by using more resources (such as [physical](#), [human](#), or [natural capital](#)) or "intensively" by using the same amount of resources more efficiently (productively). When economic growth is achieved by using more labor, it does not result in per capita income growth (see [Chapter 4](#)). But when economic growth is achieved through more productive use of all resources, including labor, it results in higher per capita income and improvement in people's average [standard of living](#). Intensive economic growth requires [economic development](#).
(Source: *The World Bank*: <http://www.worldbank.org/depweb/english/beyond/global/glossary.html>)

Gross National Product (GNP) per capita is widely acknowledged as a key indicator of economic development, because it has been found to correlate with a number of other factors of development. However, the World Economic Forum has built a more comprehensive set of indices representing multiple dimensions of economic development, in the form of a Global Competitive Index (GCI). The GCI comprises a representation of national competitiveness, which captures both macroeconomic and microeconomic factors of economic growth.

The World Economic Forum framework was prepared by a team of leading economists headed by Xavier Sala-i-Martin and first applied in 2005. It has gained support from world leaders of the World Economic Forum and is continuously refined and expanded. The country coverage of the latest Global Competitiveness report embraces 133 countries, and the annual series is being expanded with regional and thematic reports, ref. to Part B. The WEFORUM annual report on Global competitiveness is the flagship of the World Economic Forum publications. Other relevant indices covers topics of networked readiness, ICT usage, global information technology, financial development and much more, but the country coverage of other reports is more limited.

The WEFORUM concepts and profiling of competitiveness, captures the complexity of economic development through its various dimensions represented by 12 pillars of development /competitiveness, and by modeling different stages of economic development from basic requirements to innovative features. Each index (pillar) is generated from a number of indicators, comprising in total 113 variables, of which two thirds are generated from executive opinion surveys and the rest are public data, as described in the technical notes, <http://www.weforum.org/documents/GCR09/index.html>

The framework allows classification of economies into three overall groups: Factor driven, Efficiency Driven and Innovation driven economies with two transitional stages, in total five stages of development.

Figure 1: The 12 pillars of competitiveness

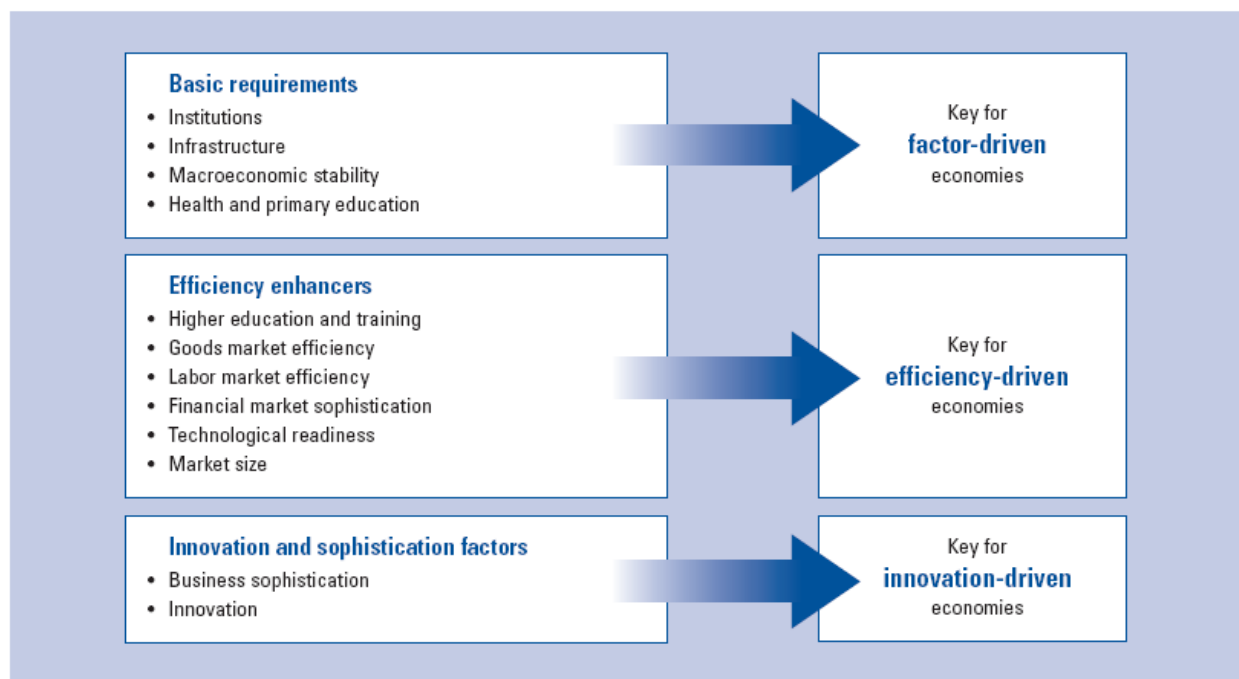


Fig. C.1. The 12 pillars of competitiveness of the World Economic Forum Monitoring System, Source: World Economic Forum, GCI-2009-2010: Chapter 1.1, p. 8

At the basic stage of development characterizing Factor Driven Economies, emphasis is laid on the Pillars One to Four, including Institutions, Infrastructure and human development factors of education and health. At the second stage, Efficiency Driven economies, different market factors feature prominently along with secondary and higher education.

Hereby, the model underlines the fundamental and prime importance of property rights in development. As can be seen the WEFORUM Global Competitive Index represent prominently different dimensions of property rights and property institutions: Pillar One. 'Institutions', features as component 1.01 Property Rights. Hereby the GCI is in accordance with institutional theories underlining Institutions as being of prime and fundamental importance to economic development, and among institutions property rights is being first in rank. Other parameters included in Pillar One, are also relevant to property rights protection such as 1.05 'Judicial independence', and 1.09 'Efficiency of legal framework in settling of disputes'.

Institutions and property rights together with infrastructure and human 'capital' - education and health – form the foundation of the economy at the basic stage of development characterizing 'Factor Driven economies', according to the WEFORUM model.

The WEFORUM index of GCI accounts as well for the role of financial markets through Pillar Eight, Financial market sophistication. Since Pillar VIII belongs to the factors emphasized at the second stage of economic development (Efficiency Driven Economies), a priority order of development is also suggested through the model of the World Economic Forum, with first priorities given to property rights protection and infrastructure.

In this way the WEFORUM GCI provides a comprehensive, but general, framework for analysis of the topics of property rights and mortgage credit in economic development.

Further elaboration of the role of property rights registration systems and mortgage finance is needed, for which reason selected theoretical issues in this area are discussed below, but in fractional ways only.

Methodology and the Time Dimension

A parameter of importance for all three topic areas (A., B., C.) is 'time'. *Time is a key issue in long term credit*, because of the uncertainty associated with a large credit commitment into an unknown future. The time dimension is also seen here as key to understanding property rights and economic development.

Property rights are formed by the past as an embodiment of accumulated history, and the implicit nature of property rights is an expectation of their protection in future time. Mortgages are long term commitments reaching far into the future, built on property pledges. It follows that mortgages are connecting the past with the future. The time dimension is enhanced by economic development being a concept defined in time, showing the centrality of a time scale.

The role of time and history is emphasised by economists e.g., through the concept of path-dependency:

"Path dependence is the key to an analytical understanding of long-run economic change." (North, 1990, p. 112)

"A central factor shaping the development of a financial system appears to be the nature of the legal system. Within that context, the basic point of path dependency is that 'the path of the law shapes the law'", (Renaud, 2008, p. 262)

In the specific case of the Danish mortgage finance system, *trust in the system* was built over time, and its robustness is underpinned by its 200 year long record. The timeline plays a significant role in the review Part A, because it has allowed economic development to be studied through the observations made by authors on mortgage credit from different times with reference to historic events, and the time line has illustrated the impact of institutional changes over time. Observations in the Danish case may also be supported by statistics in long time series, which carries prospects for future quantitative research.

Mortgage credit systems have their inbuilt inertia, because of the long time horizon of mortgage credit, which stands in contrast to how quickly one may engage in a mortgage credit contract. Once a mortgage is taken and a long mortgage bond series is launched, it takes time to sweat it out of the mortgage system.

Development of property registration and cadastres carries a heavy historical weight, and implementation of land tenure reforms takes substantial time.

The cases of Denmark, Nicaragua and Ghana illustrate how distinctively different the land tenure conditions and property rights protection are in each country seen both through a current and historic perspective.

It seems impossible to understand the peculiarities of the US Mortgage Backed Securities without going back into how the constructions came about in the first place, or to understand why the German real credit market is so conservative without its historic context. In the case of Denmark the time line is also illustrating an important dimension by showing the fortunate sequence of events that lead to the Danish mortgage finance system.

In this way the explorative approach to the study intuitively lead to identifying history as a strong parameter in the analysis. The time perspective also instills a humble attitude, because history shows, that it may take considerable time to develop mortgage markets.

*" In order to create a qualitative understanding of the factors polarising the world in growing wealth and growing poverty we need to create **economics by inclusion**, a system where all relevant factors are considered simultaneously. This will bring back the historical/institutional approach to economics that died after World War II. This economics by inclusion will also open the way for **policies of inclusion**, a system that will put the accent on the wellbeing of the majority and not on the growth of the export sector."* Reinert, 2006, p. 19:

The implication for the analysis is that a snapshot data set may not suffice: Market analysis and indicator development require observation of development trends. This is suggesting an approach of mapping out time lines, and searching for time series of relevant data and indicators in parallel with descriptions and qualitative analysis of actual conditions for mortgage credit development.

Approach to Discussion of Economic Development

The point of departure for the study is finance, mortgage finance, and how it depends on or links to property rights' protection and economic development. Causal relations are important, e.g., because they throw light on questions of prioritizing and sequencing of interventions.

The explorative part in A and B revealed relations between each topic with economic development, and there were shown forward and backward linkages to economic development.

In addition to the inherent relation between property rights and mortgage pledges it was shown in Part A and B that:

- Property registration serves as a lever for the mortgage market (Kruse, 1923), but registration alone is in-sufficient for development of a mortgage market, which depends on other conditions as well, especially income opportunities and a general positive trend in macro-economic development inducing confidence in the market. It was also discussed that affordability of housing and mortgage credit also depends on supply mechanisms, especially land supply, and that finance cannot fix problems in the real sector.
- With reference to the Danish land registration infrastructure, it was shown how mortgage finance with a volume of mortgage pledging can help boost existing land registration systems (revenues), and contribute to development of the infrastructure and services in accordance to user requirements of market participants.
- It was shown, how collateral security is key to mortgage finance, and different conditions have to be fulfilled to ensure collateral security: Legal protection of mortgage pledges, appropriate valuation of property, and access to effective foreclosure. As concern foreclosure comparative studies have shown how mortgage credit markets are negatively affected, if foreclosure regulations and procedures are not functioning swiftly and effectively (Japelli 2002 (Italy), (Gent, Kudlyak, 2009 (US))).

Thus the base in the triangular relationship (A-B-C) is strong, but this does not give direction to how strategies of developing a positive spiral of growth can best be designed.

The discussion below is limited to highlighting of selected issues based on literature studies on

- ⇒ Relation A-B: Property and mortgage markets;
- ⇒ Relation B-C: Institutions, property rights protection and economic development;
- ⇒ Relation A-C: Money, credit and economic development;

In conclusion it is demonstrated that Collateral security is a common denominator between property rights, mortgage credit and economic development. A new direction in economic theory put collateral at the centre of financial policy, rather than as previously emphasizing interest rates (Geanakoplos, 2010).

2. Linking Property Rights and the Mortgage Market (A-B)

2.1 Overview of Questions Selected for Discussion of Property Rights

Property rights and Economic Development

The topic of property rights can be treated from many different angles in connection with economic development. Selected issues of property rights are discussed below through the following perspectives:

1. The institutional view
2. The Collateral View
3. The Market Perspective
4. Social Capital and Trust

Different variants of the discourses on land and property rights are overlapping and non-exclusive. Each theory seems to be supported by different professional groups or different schools of research nurtured by particular clusters of activities. Of common interest for all are the issues of good governance of land and affordable housing.

The definition of ‘institutions’, as applied by the institutionalists, is wide (rules, procedures and norms), and includes as a component ‘property institutions’ interpreted as organisations. ‘Institutions’ in its widest interpretation also embrace social norms (North, 1990). In connection with NIE selected elements of social capital and trust are discussed. In this way institutions can be seen as an umbrella concept including all of the above. Nevertheless development theories associated with each of the issues differ somewhat, but all are supportive of the notion that property rights are conducive to economic development.

The institutional view is well established and the role of the institution of property for economic development well accounted for by the school of the New Institutional Economics (North, 1990). The question to be explored here is how the ideas of NIE apply to the case of mortgage credit and mortgage pledging. What conclusions can be drawn from NIE that help establish preconditions for mortgage credit development, or for development strategies?

Next follows a discussion of contributions from economists, who focus on the meaning of ‘collateral’ for economic development. A branch of economic development theories has been launched as “Property economics” by *Steiger and Heinsohn* (Steiger, 2008). They argue that property rights through the function of collateral for money creating contracts form the basis for the modern money economy. The theory is interesting, because if they are right, the theory contains the necessary components to prove that mortgage credit contributes to economic development in an endogenous manner.

Both Steiger and Heinsohn, and North emphasize formal property rights, but from different perspectives. The special perspective chosen here is the role of collateral for mortgage financing.

Besides looking at the theoretical basis, the ideas on collateralization of property rights as represented by De Soto (2000) are discussed in view of experience with formalization of property rights and the development of real credit.

Given the centrality of mortgage pledging in formal land registration systems for mortgage finance, it is clear that the analysis is focused on a formalized property rights regime. Eventually, the property registration systems need to be scrutinized to clarify what type of protection they offer, although that is made difficult by lack of information, as shown in Part B.

On this background it seems fair to conclude that that property rights with access to collateralization is required to trigger economic development, if not a prerequisite for economic development, but it does not follow that formalization of real property can stand alone. Neither is it given how formalization of property rights should be implemented, nor if all types of areas or possessions need to be under similar property regimes.

Observations on Credit markets and the Real Market (A-B)

The link between mortgage finance and property rights is bidirectional: 1.) By definition mortgages are secured by a pledge of the property right, and 2.) since real estate markets depend heavily on borrowed funds, are credit conditions bound to have an impact on transfer and development of real property (Fisher, 1969, pp. 418-424).

Property market values fluctuate with conditions in the financial markets, as can be seen during bobbles and busts, but also for a number of other reasons (BIS, 2004). Fisher stated already in 1969, that 'the effect of monetary policy on real estate has undoubtedly strengthened during recent years'. It is evident that the real estate market becomes increasingly dependent on credit with higher property values, and that the mortgage finance market is closely integrated with the overall capital market, thus dependent on e.g., interest rates and financial policies.

From the above follows an initial observation, that mortgage finance appears to have the upper hand *in a mature land market*. Renaud goes a step further by stating that 'Cities are built the way they are financed' (Renaud, 1996, 1999), but that observation seems more related to the overall differences in character stemming from housing built by incremental private financing, formal private credit and state financing. Such quality differences are visible in urban settlement patterns.

The questions on mortgage credit are discussed under the presumption of a market economy, so market factors are cross-cutting issues irrespective of theoretical basis. Nevertheless, the function of the market merits separate discussion, because the property market and mortgage markets are interdependent. Since the theoretical basis of the underlying market functions go beyond this study, only a few related questions are discussed from an empirical perspective.

Simple statistics show that the mortgage market makes up a large percentage of all private credit and of the national economy as illustrated of the outstanding mortgage credit to GDP ratios, Part A, chapter A.1.3.

The transmission channels between the property markets and the mortgage credit markets are many and changes in credit conditions transmit to the property market (Fisher, 1969, p. 419).

Harvey and Jowsey (2004, p. 29) define '... markets as any arrangement by which buyers and sellers are brought together to fix a price at which goods can be exchanged', while considering the 'real property market' an abstract aggregate of many sub-markets.

Any analysis of market forces will need to look at both demand and supply mechanisms.

The real estate market tends to be highly sensitive to changes in the availability and cost of credit. Real estate developers depend on availability of long term credit for potential customers, when selling properties in the retail distribution. Would be buyers must first sell their properties, etc. so in this way different parts of the real property market are tied together. It is also well known, that property prices are impacted by availability of capital and the terms of repayment (ibid., p. 422). For these reasons changes in credit markets are reflected in the volume of housing starts and activities in the construction sector in general (ibid. p. 420).

In land economics there is left no doubt of the necessary legal foundation of the market: The real property market deals in 'property rights' or clearly defined legal interests. The market works efficiently, if rights are clearly defined and the costs of negotiating and enforcing contracts are small relative to the overall transaction. Inversely the efficiency of real property markets is reduced by:

- Imperfect knowledge
- Imperfect competition (monopoly interests) and
- Relatively high costs of dealing.

This is fully in accordance with theories of transaction costs as developed by North (1990). It follows that adverse factors to market development are such factors reducing transparency and increasing costs, for example lack of information infrastructure, but also corruption and ‘red tape’.

Even with reduced market efficiency, Harvey and Jowsey state that prices of real property do respond – given sufficient time – to changes in market conditions of supply and demand.

Land economists also pay attention to the distribution problem concerned with an optimal distributions being a condition for economic efficiency (‘Pareto Optimality’*). Through an analysis of factors determining the market versus an optimal distribution in an economic sense, it is concluded that the market economy is unlikely to be fully efficient in allocating of resources (Harvey, Jowsey, 2004, pp. 5-16).

The role of planning and infrastructure for urban quality is also well described. In this way land economists describes the foundation of property rights in economic development in a clear and comprehensive manner. Unfortunately, it has not been possible to pursue these subjects in further detail in this study, but the stringent treatment of the mentioned topics in land economics by use of mathematical analysis provides justification and inspiration for development of indicators (Part B), an open topic for future development.

Changes in home construction and transactions are having an impact on other associated real investments in public services, utilities and commercial constructions. At the same time, local variations in property markets are significant, so different urban areas have each their profile of growth and development linked not only determined by the credit market, but dependent on demand, thus linked to e.g., employment opportunities (Pande, Udry, 2005).

Currently, a discussion of mortgage credit and the market forces, inevitably leads to questions following the so-called subprime crisis, serving as a gigantic illustration of how the capital market is affected by mortgage market, and how the real markets and capital markets are intimately connected. For this reason a selection of views and observations on the crisis are added in the final chapters, but given the scale and complexity of the whole matter, fractional in both format and contents.

*Footnote: Pareto optimality, ‘*Welfare is maximized when no one can be made better off without somebody else being made worse off*’

2.2 Property rights definitions and mortgage pledging

The discussion of property rights and economic development takes its point of departure in definition of basic terminology of property rights, where differences in essence and emphasis are indicative of the school of thought.

The widely applied illustration of property rights as a bundle of rights stems from Hohfeld (1913), and has been quoted widely (Ross, 1951, Simpson 1976, Stubkjær, 2001, Augustinus et al, 2006). In his illustration ownership is the vessel holding the sticks, and there is no ordering the “sticks”. Early writers on land economics captured the concept of property rights as follows:

“Property is the exclusive right to control an economic good” according to Ely (1914, Part I, p. 101); and
“Property in its more tangible forms implies (1) and owner, (2) the property object, (3) the state to protect the owner in his rights over the property object. The third is the most important. As long as the individual maintained possession of an object by sheer force on his part there was no “property,” but when the state guaranteed and enforced his rights property emerged. Before the formation of the modern state, family, clan or tribal governments served as the third party to enforce property rights.” (Ely & Wehrwein, 1940, p. 75)

The issue of exclusivity is often misunderstood: An exclusive right to ‘an economic good’ can well be an exclusive right to a partial right, such as e.g., a lease, or access right.

It can be seen that the economic dimension of property is evident already in the definition by Ely, just as it underlines the determining role of the state. The legal manifestation of property is here clarified by use of the

term “property rights”, to distinguish it from the physical object of property. The general term “ownership” may at times be applied also in general cases of possession without formal rights, (Haldrup, 2008).

Countries having fully implemented land laws and a formal property rights’ regime do not suffer from severe shortcomings in the conceptual definition of property rights, nor in the right to pledge, so the definition discussion may seem largely academic. However, different terminology is not only a conceptual formulation problem, but is also indicative of different perceptions of the role of property rights. Thus variations in definitions can be explained by different emphasis in interpreting this complex phenomenon, or by different applications, and perhaps by ideology.

In a largely informal context significant differences occur in definitions of property rights. This is especially clear when observing the general debate on property rights and collateral. As an example, definitions of key terms on land and property by UN agencies, FAO, and UN-Habitat, subdue the economic dimensions of property rights pertaining to a formal legal regime, while they stress aspects of social tenure, use rights, and livelihoods, with recognition of various forms of common or communally held property arrangements.

In many organizations, professional associations and development networks, the term “property rights”, has nearly disappeared, while the terms land tenure and tenure security are dominating. Even FIG does not include “property rights” as an entry in its glossary, , neither does the UN-ECE, but definitions of “collateral” are included, <http://www.fig.net/pub/figpub/pub21/figpub21.htm#APPENDIX%20IV>.

Over the latest decades the prime influence on thinking in respect to property rights has come from the school of New Institutional Economics (NIE), who count prominent economists, notably two Nobel prize laureates, Oliver Williamson and Douglass C. North, who have provided valuable insight into the critical importance of institutions and transaction costs on economic development.

The institutional perspective of the NIE is reflected in their definition of basic terms (North (2000, p. 33):

“Property rights are the rights individuals appropriate over their own labor and the goods and services they possess. Appropriation is a function of legal rules, organizational forms, enforcement, and norms of behavior – that is, the institutional framework.”

Thus this is a broad and holistic definition covering both movable and immovable property, ownership and possession, but without specific mention of the different dimensions of immovable property rights, a critical shortcoming in the present context. Nevertheless, the focus of NIE on transactions and transaction costs strike at the heart of the functioning of the property market and the associated issue of mortgage financing. The role of transaction costs in mortgage market development has been substantiated in comparative studies of mortgage markets (Part A, Chapter A.1).

Heinsohn and Steiger challenge the broader definitions of property rights as formulated by the New Institutional Economists, due to their lack of regard for collateral in economic development (Steiger 2006, 2008).

They claim that misunderstandings in economics arise from the lumping together of property and possession without touching upon the essence of property, its capacity to be burdened and encumbered, that is, to be collateralized. This has lead economists to overlook the importance of collateral and own capital, they claim. They argue that collateral and own capital is the missing link in the economic theory of the rate of interest and money, a statement underlined by their observations on the causes of the subprime crisis of the missing collateral and own capital (Steiger, 2008, p. 215), (Geanakoplos, 2009).

Their contributions on the role of “collateral” is not only of interest for economic theory, but also central in discussions on housing finance, due to their emphasis on formal property rights as a condition for economic development. This is manifested by the name they have adopted, “Property Economics”. The distinction between possession and property constitutes the basis of the theory of property economics (Steiger, 2006). The group of contributors includes Hernando de Soto, well known for his works on estimating gigantic amounts of “dead capital” held by the poor in informal economies, thus suggesting the value of real assets to be enhanced by a formalized property rights’ regime. De Soto might as well be grouped with the school of

NIE, due to his analysis of the insurmountable transaction barriers hindering the poor from entering the formal sector and taking part in development. Thus one set of ideas may not necessarily exclude the other, despite controversies amongst them.

Steiger underlines that, .. “the institution of property does not develop a social security net out of itself. When introduced into possession-based systems, it rather destroys the existing, albeit low-level, schemes of social security, which can only be guaranteed by governmental institutions. Therefore, property economics does not neglect the state as a necessary institution both for the establishment and the survival of property rights.” (Steiger, 2006, p. 189).

While many studies on land tenure security in developing countries analyze various forms of tenure security based on social tenure in rural areas or in slums, the focus here is on an enabling formal property rights regime, which allows wider segments of urban dwelling properties to be pledged as security for mortgage credit.

Formalization is a major challenge in many developing economies, where land tenure is predominantly informal, just as the classical methods of formalization are disputed options of land tenure upgrading under many circumstances, as further discussed in (Deininger, 2003; Payne et al., 2007, Durand-Lasserve, 2009).

Information on land registration needs to be supplemented with profiling of other land issues framing the property and mortgage market. Of importance for mortgage credit development is the existence of a functioning property market with land supply for urban development and infrastructure for housing. The focus on poor suburbs and slums has diverted attention away from land titling in other areas, including the issue of registration of government land.

Mortgage markets also depend on supportive services: a property market infrastructure, transparency, and information services. It is generally acknowledged that (low) transaction costs are critical to the functioning of the property markets in general (North, 1990) and mortgage markets in particular (Wyman, 2003).

2.3 Security of Collateral as a Key Concept connecting the three Topic Areas

A common denominator

Evidently “security of collateral” is at the heart of the study, because a mortgage pledge is a legal commitment, whereby a property right is pledged as security for real credit according to the definition (Part A, Chapter 1.1). With the added emphasis by economists on the role of collateral (capital coverage) at macro-economic level and in the financial sector (ref. Basel II, www.bis.org), it is clear that collateral security is not just one of many conditions, but a central one as underlined by its multiple links with property rights, mortgage credit and economic development established by different groups of economists.

Although economists use the term “Collateral” in a wider sense, namely as all types of assets (real or financial) used to secure credit, immovable assets still form a central component of the general concept.

In part A it was shown how collateral security is increasingly being stressed in the EU, with new initiatives on developing best practices in a range of topics, such as valuation, transparency and property rights infrastructure, Chapter A.11.

Collateral security is here interpreted as a material dimension of the North-Weingast (1989) commitment mechanism securing lenders’ confidence in fulfillment of a long term credit contract, but it does not stand alone. Investors’ confidence and collateral values are dependent on the existence of trust in a wider sense.

A rational lender will need to have general trust in the legal system on which contract fulfillment depends and in the wider economy. Trust in turn is built through positive trends in the macroeconomic environment, rule of law and protection of property rights through functioning property institutions (Renaud, 2008).

Collateral values collapse, if trust in institutions or society at large are undermined, as is immediately the case with the outbreak of violent conflicts or revolutions. Collateral security therefore seems to be upheld by general trust. In this way a discussion of collateral security draws in aspects of the role of trust in economic development (ref. to Chapter C.4.3).

At the underlying operative level, security of collateral depends on a functioning system for identification and registration of property rights, on application of transparent and correct valuation practices, enforcement of rights and on effective foreclosure, etc.

On the supply side a housing finance system based on market principles (as is the case of the Danish mortgage system) also depends on a developed financial infrastructure and an enabling environment which will allow housing to be developed in response to market needs.

In conclusion it is suggested that the combined topics of mortgage credit, cadastre and land registration, and economic development show that the issue of “collateral” is a common denominator of high importance (without excluding the existence of other common denominators). The links are below elaborated through discussions on the theories of New Institutional Economics (NIE) and property economics, as well as the basic market functions linking the real and the capital market.

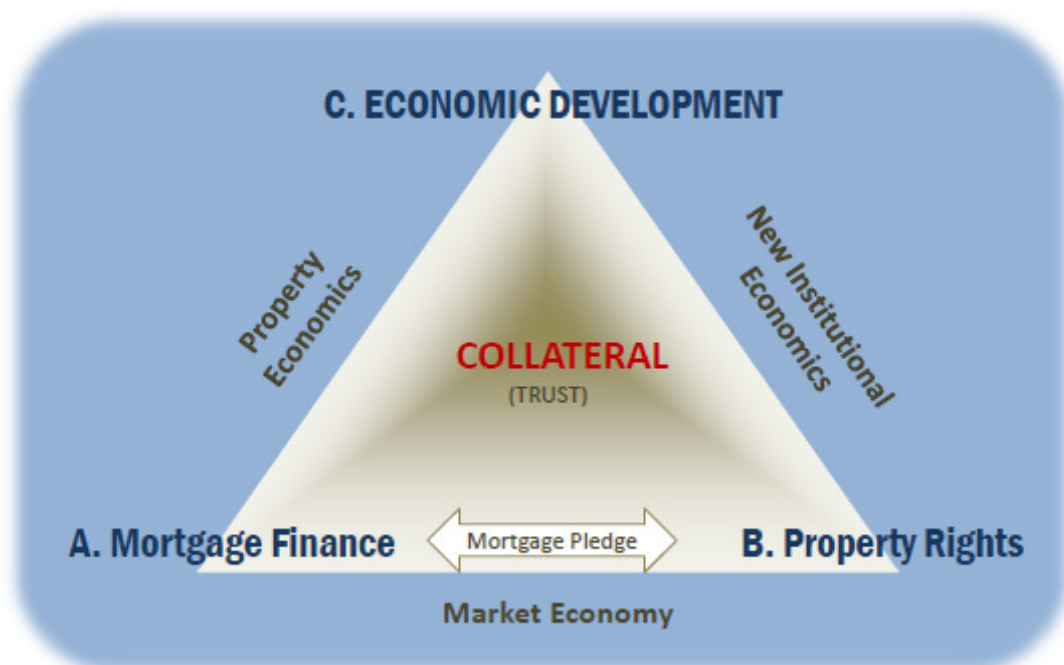


Fig. C.2. The Role of Collateral as a Common Denominator between Mortgage Finance, Property Rights Protection and Economic Development

The soundness of the real property institutions, the real property market and application of market valuation principles are closely inter-twinned. The question of the value of the collateral is not only a question of securing the collateral value of the individual mortgage credit in case of default, but an issue of attracting investors as lenders in the first place, a precondition for the success of a mortgage securitization system. As described in a European Mortgage Federation publication 2008 (EMF, 2008),

“One of the key elements defining credit quality will be the asset’s original valuation when the mortgage was advanced and then subsequent valuations monitoring the value of the underlying asset. Only if the valuation process is transparent, accurate and consistent will investors be willing to purchase Covered Bonds and MBS.” (EMF 2008, p. 7)

Other factors of the property market have been shown to determine the size of the mortgage market and hence the feasibility of introducing DRK to a country at a given point in time. Such factors are for instance socio-demographics, affordability of housing and sufficiency of land supply for urbanization. These factors

can also be seen as products of good governance of land as manifested through urban planning and the implementation of public land policies including the provision of infrastructure.

Thus it appears that the present topic spreads its tentacles through the whole urban universe of urban development, housing market, property institutions and finance. The resulting interconnectivity and complexity makes it difficult to devise a comprehensive model of criteria for introduction of the Danish Mortgage Finance system to a given country, since failures in a complex system may be caused by special factors overlooked in a general set of criteria.

The inter-woven character of the parameters of the real property market makes theoretical analysis of causes and effects difficult. Such interconnectivity may, on the other hand, facilitate development and selection of indicators, if it can be shown that some factors are correlating.

Since economists link housing finance to economic development, and long term housing finance depends on collateral security, follows a logical and grand question of what role does formalization of real property play in economic development? Therefore such questions are eventually leading to a discussion of the benefits and justification of a formal property rights regime.

3. Linking the Mortgage Market with Economic Development (A-C)

3.1 The capital market and economic development

Money, Bonds and the Foundation of the Economy

The role of credit for economic development can be traced through the history of money.

The origin of money is generally explained by a need for facilitation of exchange whether in relation to trade, to taxation or to credit, and it has long been established in monetary theories that modern economies are credit based, (Knies, 1886, Sheng 1998, Bromley, 2008, to Ferguson, 2009).

In the accounts of the history of money it is striking how economists connect financial developments to property rights. Fratianni and Spinelli, (2006: p. 259) have defined financial (r)evolution as resting on three pillars:

1. The institutional mechanism through which the debtor commits not to renege on debt;
2. The public bank;
3. Innovations in financial instruments and markets.

It can be seen that the first component, the commitment mechanism, in long term real credit is achieved through provision of collateral security in its broadest interpretation including enforcement mechanisms.

How economic development in Europe depended on innovation in financial systems and credit facilities is shown by the well documented historical case of the evolution of Italian city states in the 15th and 16th centuries, e.g., by (Fratianni, Spinelli, 2006). The origin of modern banking and accounting was Italian, as reflected in the origin of basic terminology. The oldest bank in the world still in operation was established in 1472 (www.mps.it). The Italian city state blossomed aided by its financial innovations.

At this day, Fergusson links poverty not so much to bank practices, but to the absence of financial institutions (2009, p. 65).

The public debt obligation was invented by Italian city states as an instrument of borrowing money from their citizens initially through compulsory arrangements. These important financial innovations were transmitted to other commercial centers later taking over the financial leadership, Amsterdam and London. In fact, the innovation of bonds for securitization of debt was instrumental for the rise to power of European trading centers of Amsterdam, London, etc. (Fergusson, 2009).

The early financial power in England could take place for reasons of political change that reduced the discretionary power of the monarch, gave precedent to the rule of law, and strengthened property rights according to (North and Weingast 1989, p. 824).

While the invention of the public bond formed the basis for creating of capital markets since the 15th century, the covered bond as a securitization of private debt was introduced much later. In fact the covered (mortgage) bonds of Germany, Pfandbriefen, and of Denmark, Realkreditobligationer, were among the first in the covered bond market, which grew in the second part of the 19th century, as described in Part A. Despite a growing and significant volume of mortgage bonds issued for over a century, they were almost exclusively traded domestically within the countries in which they were issued until the 1990's, but that has changed dramatically since then (Golin, 2006, p. 1).

The benefits of the covered bond market development were early understood as generating mobility of capital from bulky and fixed assets in the real market. Property rights constitute the base of the bond market. Furthermore, the financial instrument of bonds allows raising capital (borrowing money) from a much wider range of sources than only through deposits in banks (Fergusson, 2009). Seen from the side of borrowers benefits arise from the mortgage credit allowing smoothing of household consumption over a longer time span.

The early innovation of the mortgage finance system based on the balance principle was important to the development of the Danish capital market, as shown in Part A.

The bond market is now considered the basis of capital markets and the economy as a whole, because the bond market has grown to a size, when it sets long-term interest rates in Denmark and elsewhere, (Part A). The monumental size of mortgage markets worldwide impacts on the real economy (Ben-Shahar et. al, 2008), as has been demonstrated through the financial crisis starting in 2007. The shadow side of the bond market is its stronger effect on a financial crisis.

Sheng (1998) analysed the crisis of money in the 21st century, and describe a financial crisis as a sharp wealth loss by an economy, manifested in asset price collapses with threats to the stability of the currency and the banking system, thus demonstrating the intimate relation between the real market and the economy.

Power, taxation and the institution of property

When property rights forego economic development, one may ask wherefrom do property rights arise? Martin (2008, pp. 75-109) argues that power to tax foregoes the institution of property. Implementation of legal acts does not occur as a natural event, but must be established by power (Martin, 2008, p. 79), and power must be financed. Therefore Martin argues that the institution of property cannot be defined without the power to tax (2008, p. 78). “The tax system cannot be evaluated by its impact on private property, conceived as something that has independent existence and validity”, but “*Taxes must be evaluated as part of the overall system of property rights that they help to create*” (Murphy and Nagel 2002, p. 8).

Historical studies are supportive of the role of taxation in creating the institution of property rights: Censuses were conducted to establish a register of people and property for taxation purposes, and the public money (legal tender) was introduced in order to pay taxes. (Martin, 2008, p. 80): “power precedes taxes, power precedes money, power precedes property”. Titles can only exist if they are protected, so the property title “power” precedes all other titles according to Martin (ibid., pp. 84-5).

Martin showed with the history on “Danegeld” (ibid., p. 95) how commercial markets arise as a result of taxation suggesting that taxation also constituted the historical roots of the economies themselves.

In conclusion it is observed that overall preconditions for developing mortgage markets are the credibility of the state in honouring its debt commitments and the related topic of the state capacity to tax.

In a modern context it can be added, that current trends of promoting decentralization as a development objective, is dependent on local financing and thus linked to taxation (Olsen, Therkildsen, 2001). Urban infrastructure depends on local financing and land taxes play an important role as a local revenue source, at least until more sophisticated taxes can be levied.

Following this logic, trust in the state and government ability to tax is relevant to mortgage credit.

In practice the pricing of credit in the capital market at macro-level is dependent on the country risk including ‘sovereign risk’ (ref. definitions: <http://www.finance-lib.com/financial-term-sovereign-risk.html>). On this basis it can be argued that indicators on national debt commitments are relevant for screening conditions of the mortgage market, ref. to the use of the World Bank credit status in the classification proposed in Part B, Chapter B.9.2.

3.2 Financial evolution and economic development

Innovations and development

Having seen the strong interconnection between property rights and mortgage credit and their central role in the economies, is leading to the question of how is evolution of the property institutions and the credit market set in motion.

What are, or were, the critical components in financial (r)evolutions have been studied by prominent economists, who have found that there is no single, unique, financial evolutionary path. Different development paths emerge from having different institutions; and institutions differ because of e.g., different incentive structures (Fratini, Spinelli, 2006, p. 258).

North has listed the following innovations in his historic account of economic development (1990, pp. 125-126):

1. Techniques and methods evolved to evade usury law;
2. Evolution of the bill of exchange and particularly the development of techniques and instruments that allowed for its negotiability - discounting methods;
3. Innovations leading to lowered information costs, such as measuring standards, manuals, etc. facilitating a volume, thus economics of scale;
4. Transformation of uncertainty into risk, hereby making an actuarial determination of likelihood of events, and creating of various types of insurance.

The evasion of usury law played a role in the development of mortgage credit in Denmark in the 19th century, when the maximum interest rate was regulated at 4%. The nominal interest rate of mortgage bonds were set at 4%, but the yield through investment in mortgage bonds could be substantially higher, since the bonds were traded significantly below par, and were thus attractive to investors. In this way, the possibility of evading from usury law helped increasing the attractiveness of mortgage bonds on the capital market in the first phase of mortgage credit development in Denmark.

Usury law is still limiting development of a transparent capital market in Muslim countries (Sookhdeo, 2008).

The third type of innovation, converting uncertainty into risk, is a highly actual topic given the effects of advanced hedging techniques in the financial crisis (Ferguson, 2009, pp. 224-230). Hedging is a contract in the upper spheres of the capital market sold to a speculative investor taking on the risk of a financial asset - at a price - in the expectation and hope to profit from future price changes (similar to an insurance contract).

Ferguson (2009) argues that there are unforeseeable events, which remain uncertainties at a higher level, such as big catastrophies changing investment conditions entirely, whether man-made or natural disasters. Therefore the idea that it is possible to protect an investment or to insure against future uncertainty in general must be dismissed, because when big calamities hit, the system will be overloaded.

Despite adoption of innovative methods, it was perhaps not possible anyway to convert all future uncertainty into calculated risks, because events have shown that uncertainty at a macro level escapes statistical risk calculations and cannot be eliminated. As expressed by Hagen (2005): *“As an incentive to all market participants it may help to recall that all covered bond issuers are sailing the same waters – come sunshine or storm.”* And now storm has come.

In the storm the foundation of the debt is tested, the values sustaining the debt, collateral values in case of mortgage debt, or income streams (from taxation etc.) in case of state debt. Shrinking property values are the outcome of a contracted economy with lower demand, and illustrate the dual causality between mortgage credit and economic development.

In this process the limits to the use of real credit in generating economic growth are tested. Since 2000, the growth in the American economy has largely been financed by mortgage equity withdrawal, not by increased productivity. With the economic crisis the equity has shrunk, so that about 20% of all mortgages exceed the market value of the pledged properties. If household debt far exceeds annual incomes, and if the collateral value against debt in the financial sector is extremely low (high leveraged), and if the government debt exceeds GDP, where is the limit? (Ferguson, 2009)

A return to point one in the principles of financial evolutions is taking place: A test of the institutional mechanism through which the debtor commits not to renege on debt (Spinelli, Fratini, 2006). And a lot of

American households are not seeing the commitment mechanisms strong enough to withhold them from walking away from debt, (Ref. to Chapter C.7.3).

In contrast, a proportion of Danish households may have negative equity in their properties, but the option of defaulting is not seen as a voluntary one, as the low default rates show. In this way the structure of mortgage credit markets and supportive institutions are shown to impact on behavior, as discussed below, chapter C.4.3.

3.3 On Collateral Security and Development

Collateral Security and Commitment Mechanisms

The early development of mortgage credit market rested on a firm foundation of property rights and enforcement. This included an institutional mechanism to ensure ‘commitment to honour debt’, a mechanism also called “the North-Weingast commitment mechanism” (1989).

North-Weingast (1989) studied Britain’s financial development, and the relation between institutions, financial systems, and economic growth in the seventeenth century. North and Weingast analyzed, if there were institutional mechanism that underpins the commitment not to renege, and they linked institutional developments with lower credit risks. They found that the financial revolutions in Europe could be linked with the emergence of legitimate governments that could tax credibly, and therefore could commit to pay their debts.

However, Sussman and Yafeh (2005) analyzed the underlying historical data of that period and found that credit risk and interest rates were immediately impacted by political instability and war, while institutional changes first generate instability before being properly priced in the financial markets. They conclude that, in the short run, institutional reforms do not lead to higher growth by lowering the cost of capital. Or as phrased by Fratianni-Spinelli: “The link between the creation of good institutions and low credit risk need not emerge instantaneously; it may take time for the markets to learn the lesson” (Fratianni, p. 260, footnote).

Irrespectively, the incentive structures and the commitment mechanisms are here seen as central in the discussion of evolution of the mortgage credit market, and it is evident that the commitment mechanism in mortgage credit is tied to the property rights regime.

The commitment mechanism, on which a mortgage credit system is founded, involves a range of social-cultural-legal administrative components. In some respects incentive structures are also built into the financing models itself, as illustrated by the differences between the Danish mortgage credit system and the funding mechanism of Mortgage Backed Securities (Chapter A.1.7).

Collateral security is here treated as the tangible dimension of the commitment mechanism, but collateral security would be an illusion without a generally sound credit culture, healthy incentives and functioning legal systems, or in short “the North-Weingast commitment mechanism”. Moreover, the role of the state is not only that of building legal framework and other framework conditions for the mortgage market, but also acting as a party in the credit market. Lack of credible behaviour of the state as a borrower is detrimental to the level of trust in the capital market, according to North-Weingast.

In short, collateral security is a product of the institutional setting, but is treated here as a special topic, because it defines the particular institutional mechanism of pivotal importance for mortgage credit. Thereby, it is possible to analyze criteria associated with security of collateral at a specific level. Despite of the significance of improving property institutions, the effect of such changes may be negative on the short term, before having a long term positive impact on the market, according to Fratianni-Spinelli.

On the Role of Collateral and Controversies Surrounding It

Economists debate the role of mortgage credit and collateral in macroeconomics at a level transcending technicalities of housing finance and property rights. Through the link between credit and money, and the dependency of real credit on property rights, property is connected to “money” – alias macroeconomics.

(But in finance the concept of ‘collateral’ embraces all different assets held as security for debt)

Yet collateral security is also a specific matter to be considered in each single mortgage credit arrangement, when property rights are pledged as security for mortgage credit.

While ‘collateral’ is accredited a central role in economics, land tenure experts discuss the implications of land tenure reforms and the possible *negative* effects of ‘collateralization’ of property following formal registration of property rights.

One of the key objectives of many property formalization programmes (systematic land titling and land registration) have often been improving property owners’ access to credit in addition to increasing tenure security and reducing poverty. Land titling is a key determinant for getting access to formal credit, (Deininger 2003, p. 48), and formalization of land rights have been shown to increase the level of formal credit in the a number of countries, e.g., Thailand, but most studies concern rural credit, which is distinctively different from mortgage credit for housing.

In a review of social and economic impacts of land titling programmes in urban and peri-urban areas (Payne, Durand-Lasserve and Rakodi, 2007) a wide range of questions are raised about the land titling programmes reviewed. The desk review included land titling programmes in 35 countries, but the majority of projects were predominantly rural (5 of 44 projects were related to urban or peri-urban areas), (ibid., p. 4). Rural credit and urban credit differ in nature, so it is uncertain, if their findings on credit development can be generalized.

The review illustrated that a widespread lack of monitoring data hindered monitoring of the outcome of titling projects, in particular where objectives had been expressed in terms of perception based variables such as improved tenure security. Even available monitoring data on quantifiable dimensions, as e.g., land values, was found to be highly unreliable (ibid., p. 6). Another question arises as concern the general validity of findings, because the elapsed time after project execution might have been inadequate for judging the effect of the programmes.

However, successive analysis of the outcome of the land titling programmes have shown a rather low incidence of using newly acquired property titles for mortgage pledging, (ibid., 2007, p. 14).

The most detailed and optimistic account was associated with the titling programme in Peru, where Panaritis found that 45% of recently formalized property owners had solicited loans (ibid., p. 14, 18), but the study did not cover the impact of the titling programmes taking into account affordability and mortgage pledging. Other studies on land titling in Peru are less optimistic on the effect of titling on real credit.

Controversies arise with formal registering of property, especially small holdings, if the properties are used as security for credit, but later lost through foreclosure. In such cases holders of property do not only loose their real assets, but also the basis for their livelihoods, and it is held that the whole process of formalization of property rights with access to credit has caused more harm than good. This is particular an objection against land titling in poor neighborhoods, where more sensitive tenure reforms are required to better serve a wider agenda of poverty alleviation (Durand-Lasserve, Selod, 2009).

For these reasons the discussion on the function of real assets as collateral for housing finance needs to be balanced with social issues of more general issues of secure tenure, as also stressed by housing economists (Jaffee, Renaud, 1996).

Irrespectively, this need not overshadow the critical importance of collateral security in other market segments for mortgage market development in specific, and the role of formal systems in urban development in general.

4. On Property Institutions and Economic Development (B-C)

4.1 A Well established Discourse on Institutions, Property Rights and Transaction Costs

Application of Concepts and Ideas

The importance of property rights and property institutions for economic development is well established in theory through New Institutional Economics (NIE) prominently represented by the Nobel prize laureate, Douglass C. North (1990). The institution of mortgage credit financing is here considered a case of an institution depending on property rights with a potential role in economic development.

New Institutional Economics represent powerful ideas of significance for mortgage markets development, and the comments below are directed towards exploring in what way the findings in NIE may potentially be applied for measuring institutional quality and for screening of readiness for mortgage credit on selected issues.

The following issues - as described by North - are commented below:

- a. The role of institutions in society in reducing risks;
- b. The role of transaction costs in economic development;
- c. Sources of institutional change; and
- d. Measurement of institutional quality.

Re. a. Institutions, Organizations, Uncertainty and Risks

At a theoretical level the importance of property rights institutions, property rights protection and distribution have long been acknowledged as central factors of economic development.

In general, institutions reduce uncertainty by establishing stable structures to interaction (North, 1990, p. 6), but a distinction is to be made between institutions and organizations.

In particular the protection of property rights is central to the institution of mortgage finance, and it requires a legal framework and a specific organizational set-up for protecting market exchange and mortgage pledging with third party enforcement, (ibid. p. 35, pp. 54-). What can be captured by indicators are factors of the overall legal, organizational and operational parameters, but as long as there is no full model of property rights institutions or mortgage finance institutions, monitoring will be fractional.

Uncertainty can be reduced by improving information systems, transparency, process and efficiency. Since incomplete information is a source of uncertainty it is clear that better information systems reduce uncertainty. More efficient organizations and services will in a similar way support the market by reducing risks.

Uncertainty and risks are critical parameters in mortgage finance, and risks are priced by the financial market. In the capital market innovation has permitted transformation of uncertainty into risks (On transforming uncertainty into risk, (ibid. p. 33)). Still a fundamental challenge in mortgage credit remains the inherent asymmetric information between borrower and lender (North, 1990, p. 29-30).

Re. b. Property Institutions, Transaction Costs and Economic Development

Not alone does better information (transparency) reduce uncertainty, lowering information costs will also reduce transaction costs, since information costs constitute a substantial component of transaction costs.

“The information costs in ascertaining the level of individual attributes of each unit exchanged underlie the costliness of this aspect of transacting.”(ibid. p. 29)

Information costs form part of transaction costs, and in property and mortgage markets other parameters (costs, complexity, etc.) have a price tag together with the costs of measuring and valuation of the assets being exchanged (ibid., p. 27).

Transaction costs studies have mapped out different dimensions and components of transaction costs both from a theoretical perspective and studied cost factors in particular settings (Stubkjær; 2005). A distinction is made between measurement costs, market costs and enforcement costs, where measurement costs is taken to include all types of information costs (Stubkjær, 2005).

Detailed factors of transaction costs in particular cases can be measured by indicators of time, costs and procedural complexity, but there are different ideas of how much should be counted as transaction costs: Only transaction costs associated with a specific transaction, or the costs of establishing and running the whole system (Ref. to discussion of definitions by Allen, 1999). The costs of protecting property rights may therefore be measured in different ways.

Despite unanimous evidence of the principle role of transaction costs, hence its importance as an indicator for mortgage market readiness, measurements thereof is challenging as can be seen from various cost studies (ref. Chapter B.3). Definition of a comprehensive set of indicators depends on having a full model of the phenomena (ref. to definition of indicators, Part B, Chapter B.1.2), which is not the case with property rights protection and security of collateral. It is therefore suggested that in order to make progress in the area of indicator development, work is needed in modeling of these important concepts.

Re. c. Sources of Change

Of high importance is how patterns of change can be observed and monitored, so the question is, what are the observable sources of institutional change?

Institutional change is, according to North (1990, p. 84), reflected in relative prices, and come about through changes in relative prices, especially factor price ratios – for example the price of land/labour.

“Institutions change and fundamental changes in relative prices are the most important source of that change. (hard to understand for non-economists)”

“But relative price changes alter the incentives of individuals in human interaction, and the only other source of such change is a change of tastes.”

Applied to the area of mortgage finance, relative factor costs are represented by affordability, which is a ratio between income (labour costs) and property prices (real asset costs). This is interesting, because hereby affordability becomes a central concept not only to development of mortgage finance, but also to institutional development and thus to economic development.

“All of the following sources of institutional changes are changes in relative prices: changes in the ratio of factor prices (i.e., changes in the ratio of land to labor, labor to capital, or capital to land), changes in the cost of information, and changes in technology (including significantly and importantly, military technology). (ibid., p. 103)

It follows from the above that monitoring systems on mortgage finance and property rights protection must duly represent factor costs and information costs, and that (monitoring of) changes in information systems and technology attains importance beyond a technical operational perspective. This is in line with other sources, Renaud (2008, p. 275), who links lack of affordability in housing to malfunctioning urban systems (‘institutions’).

The perception of development as incremental and path dependent is related to the idea of technological and institutional changes as the roots of economic development.

“Technological change and institutional change are the basic keys to societal and economic evolution and both exhibit the characteristics of path dependence.” (North, 1990, p. 103)

The changes function as stimuli by entrepreneurs in case they perceive that changes open for improved margins of profitability, e.g., by lowering transaction costs, in what North calls the ‘increasing returns’ mechanism’ determining the direction of the development path (ibid., p. 112). How the feed back process functions between actors seeing improved opportunities and changes in the underlying systems depends on the incentive structures (ibid., p.8), which in turn depends on enforcement of property rights (ibid., p. 112). Because the entrepreneurial activities also depend on the information they receive, then the information and communication between the public structures and the private sector plays a role in the dynamics of change.

*“The resultant path of institutional change is shaped by
(1) the lock-in that comes from the symbiotic relationship between institutions and the organizations that have evolved as a consequence of the incentive structure provided by those institutions and
(2) the feedback process by which human beings perceive and react to changes in the opportunity set.” (North, 1990, p.)*

Besides incentive structures, market size is considered a key determinant of the rate of growth (ibid., p. 75). Simple logics point to the importance of institutional enforcement of contracts in generating economics of scale, as well as reducing uncertainty by third party enforcement (ibid., p. 58, p. 127). The importance of economics of scale is reinforced by the special role of covered bonds as ‘mass securitization instruments’ in the Danish form of mortgage finance system.

It can be added that crucial policy choices and discontinuities in development shape economic development, which are not only projections of the past. Policy changes and new initiatives can shape development for the good (or worse). The case of Denmark (Part A) and the case studies in Part D are illustrative in this regard.

Re. d. Measurement of Institutional Quality and Performance

On this background there is left no doubt on the centrality of measuring institutional change and transaction costs, when screening for readiness for mortgage credit. Challenges of measurement relate to definition of components of institutions, and observations on their attributes. A distinction is to be maintained between institutions and organizations, the latter being components of property institutions, while technology is a dimension of organizations. Organisations can be observed in the form of input, output, and to some degree outcome relative to objectives, and performance relates to functions of organizations.

The quality of property institutions at large is gauged by transaction costs and by the level of interest rates in capital markets (according to North, 1990, p. 69, p. 43). This is because interest rates function as an indicator of institutional uncertainty.

“The striking decline in interest rates in the Dutch capital market in the seventeenth century and in the English capital marked in the early eighteenth century provides evidence of the increasing security of property rights” (p. 43)

The role of scale of economics on lowering transaction costs through state enforcement is part of the justification for well-functioning land registration systems in the first place, so the challenge is to balance the role of the state so as to nurture economic development (ibid. p. 58).

Measurement of transaction costs as a whole is a demanding task (ref. to Chapter B.3), but information on interest rates in capital markets are readily available (national statistics). Beck et al. (2009) make more clear conclusions on the relation between interest rates and institutions in the case of Africa, by identifying lack of protection and order in property rights as the reason for the high interest rates in Africa.

“Decomposition of interest spreads and cross-country comparisons of interest margins typically point to the small size of African banking systems, deficient contractual frameworks, and limited protection of property rights as an explanation of the excess spreads and margins in Africa compared to other regions.”(Beck et al, 2009, p.5)

It can be concluded that some key indicators emerge from the theory of New Institutional Economics, such as transaction costs, relative factor prices, scale /volume of the market and interest rates.

Other questions remain open, especially questions on how it is possible to observe the role of property rights institutions and security of collateral in qualitative terms: How can quality of the property rights protection be determined or rated? The challenges of measuring impact of the property regime on economic development are similar to responding to the reverse question: What type of protection of property rights, and what quality of property institutions is required, or is conducive to economic development? Both questions depend on a qualitative or quantitative measure of aspects of property rights regime at a macro-level. No such indices have been identified (Part B) and contributions in this respect were not possible in the present study.

When searching for indicators of mortgage market development it might be worthwhile to study incentive structures, because they are determining for behavior in the market. An understanding of what factors provide incentives to evolution of strong and orderly property and mortgage markets would therefore be of importance.

“In other words, the understanding of the factors that provide incentives to societies to maintain high-quality institutions is the key.” Gradstein, 2007, in “Institutional Traps and Economic Growth”

However, how to map out incentive structures is not obvious. Fractional elements of incentive structures were e.g., seen with the role of ‘equity’ in the US mortgage market, a factor which might serve as an indicator on commitment not to renege on debt, as discussed in chapter C.7.3.

The general challenge of how to apply the concept of sound institutions in a real world situation has here been approached by applying the models of governance and competitiveness as developed by the World Bank and the World Economic Forum, respectively, Part B, Chapters 7.2, 7.3. No similar framework exists in the area of property institutions and land governance, which is applicable for measuring institutional development for screening of institutional quality and readiness for mortgage credit development.

Instead the proposed screening methods in Part B rely on measurements of institutional qualities as defined by the Worldwide Governance Indices modeled by a research team of the World Bank. Other measures of institutional properties are components in various cross-country macro-economic rating systems developed by economists, e.g. the Weforum Global Competitiveness Report, and World Bank Ease of doing business, commented in Chapter B.6.1.

Although property rights take a prominent position in macro-indices, it is also clear that the highly generalized and perceptual representation is not doing justice to the multifaceted quantitative and qualitative factors of property rights in development. This is presumably due to the lack of macro-level indicators and ratings from the land sector.

Given the shortcomings of existing monitoring systems and lack of data as described in Part B, there is ample space for improvements, also in the well-established areas of monitoring of transaction costs, land registration, etc.

The question is not if property institutions are important, but what are the minimum requirements to property institutions for functioning of a mortgage finance system. Analysis of requirements for introduction of a housing finance system according to the Danish Mortgage Finance System was made in Part A, but only general answers were found to what constitute minimum requirements at the introductory stage.

4.3 Institutions and the Issue of Trust and Social Capital

The definition of institutions includes less tactile dimensions and norms that shape human behavior, so interpreted in its broadest sense institutions include aspects of social capital.

“Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social,

or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change.” North, 1990, p. 3

In this way, the question arises from the previous parts if – in addition to the tangible prerequisites - mortgage credit development is also dependent on a stock of social capital, cultural values and behavioral patterns? The relevance of exploring the question is found firstly in the etymologic origin of the term ‘credit’ as stemming from ‘trust’, since trust is associated with social capital at large. Secondly, the social construct of mortgage credit *associations* played a prominent role of in the history of the Danish mortgage credit system. Mortgage associations are to be seen in the context of the cooperative movement shaping early economic history in Denmark.

How the Danish development path was impacted by cultural movements was documented by Stubkjær (2008, pp. 233-9), who argue how a relatively high level of trust in Danish society was built during the previous centuries. The social dimension of trust was touched upon in analysis of the emergence and evolvement of mortgage credit associations. Part A. It was also shown how investors’ trust in the mortgage finance system was built over time, although trust in the capital market has a different, de-personalized character.

Social capital is defined by Fukuyama (2000) as “*an instantiated set of informal values or norms shared among members of a group that permits them to cooperate with one another*”. Trust is seen as a result of social capital. The notion that trust is inductive to economic development was advanced by Fukuyama, who is famous for coupling the ideas of social capital with the development of free-market liberal democracy, but it has not been possible to go deeper into that discussion here.

Francois (2002, p. 6) defines trustworthiness as a vital feature of social capital that helps cooperation to emerge even if interests of different parties are not aligned, but the way economists view the concept of trust may differ from social scientists’ perception, according to Francois.

An economic perception of trust is that someone will act in a manner consistent with what he or she promises. If seen in a broader view, that could be perfectly consistent with serving ones’ self interest, thus not so distant from the classical idea of the behavior of economic man.

However, Francois defines trustworthy individuals as individuals, who do what they promise to do, because they have promised it, even if it may in a narrow perception be against their self-interests. The pursuit of self-interest must somehow be restrained according to Francois (2002).

Francois’ analytical framework traces the links between two complementary elements of modern production: the risk taking entrepreneurs, who must endure vulnerability to opportunism; and the trustworthy individuals, who make such entrepreneurship viable. On this basis he concludes that modern industrial production and trustworthiness are mutually reinforcing and self-sustaining phenomena.

It is against their nature to compare mortgage finance institutions with risk taking entrepreneurs, but if applying Francois’ analysis to the development of Danish mortgage credit associations, it seems plausible to assume that the emergence of mortgage credit associations depended on a social capital base with trustworthy individuals. Growth of the mortgage associations may on the other hand also have increased the stock of social capital over time. That perception is shared by Glud (1951), who saw the mortgage finance system as having contributed to lowering inequality in Denmark. Interestingly, protection of property rights may indirectly have fostered creation of social capital, according to Fukuyama (1999).

Cooperation was clearly an inherent feature of the origin of mortgage credit associations, but credit itself represents a different type of human interaction than socio-political activities, production and trade. Trust in the context of long term credit arrangements differ from trust in trade and production, because in production and trade

- exchange occurs in principle instantly, so that there is limited time lag between payments and deliveries,

- in contractual arrangements related e.g., to production and trade it is difficult to include all possible eventualities into the contract, and
- the frequency of interaction is often high with repeated exchange.

In real credit, in contrast, the contents of the arrangement is clear, simple and fully codified, but the time difference inherent in long term credit agreements introduces another form of uncertainty into the contract, namely that a borrower cannot (or will not) honour her/his commitments. For these reasons, it is suggested that the role of trust in long term credit has a distinct character, and it is basically substituted by incentive structures embedded in institutions of mortgage pledging and enforcement. In this way 'security of collateral' replaces reliance on trust as a personality feature in the individual credit arrangements.

The defined maximum LTV's could also be seen in the light of borrowers needing to demonstrate a *capability to save* to achieve mortgage credit, - thus a feature akin to trustworthiness in credit arrangements. If (part of) the remaining funds between mortgage credit ceilings and the price are raised through banks, credit worthiness (~trustworthiness) will be judged at their discretion. However, the commitment mechanism arising from having equity at stake in a real credit arrangement is a case of logical, calculating self-interest rather than a personality feature.

One exception in the Danish mortgage credit system representing an explicit case of assessing borrowers is the barring of persons, registered in the register of bad debtors, from mortgage credit. In this way trust is defined by minimum qualification standards although based on objective criteria not necessarily connected to personal trustworthiness. By July 1, 2010, about 3% of the Danish population were registered as bad debtors, but in different classes of severity (<http://www.dr.dk/Nyheder/Penge/2010/07/29/080223.htm>)

Social capital and trustworthiness appear as components in finance development in Denmark at a more generalized level, since the question of trust still applies to the institutional level.

The mortgage credit associations functioned over more than a century without much state supervision, which can be seen as evidence of the benefits deriving from a transparent and simple securitization system itself, as well as the absence of malpractices and corruption. Credibility of the finance system was supported by a network of local assessors, who can also be seen as exponents of the social capital embedded in the local communities but without ruling out two-way causality. Within the mortgage industry cooperation evolved early through establishment of cooperative bodies for resolving common problems: the 'Common council of Mortgage Credit associations' was established as early as 1887 ('Kreditforeningernes stående Fællesudvalg' 1887 – 1972). Furthermore, the cooperative nature of governance and state supervision was evidenced by the membership of State representatives in the common council (1887-1972), which continued in new cooperative bodies after that time.

On this basis it seems fair to assume that social capital played a vital and positive role in the organization of mortgage credit in Denmark, but the area merits further research. Therefore, it is not immediately possible to draw conclusions on the feasibility of translating the finance system to other country contexts as measured by indicators of trust and social capital, apart from observing that negative factors as corruption would obviously be destructive. However, the possible two-way causality of trustworthiness and economic development gives hope also in cases of a weak point of departure, given positive trends and initiation of a positive cycle of events. In such a process of mortgage credit development *time* plays an important role in building confidence in the financing system, as demonstrated by the mortgage credit development in Denmark, and a feature stressed by investors. When mortgage credit development is dependent on basic institution building, time is also required for improving infrastructure and the bureaucracy (Levy and Fukuyama, 2010, p. 12).

A range of other parameters than those proposed for classification and screening calls for further analysis, when considering the impact of cultural and religious values on development, as pointed out by writers from Weber (1904) to Francois (2002) and many more.

Efforts of measuring social capital are consolidating and taking the form of global surveys, see e.g., the World Value Survey, http://www.worldvaluessurvey.org/index_organization, but these ratings have not been applied for the present project.

A practical way of accounting for some variations in social capital and cultural values would be a segmentation of markets by cultural and socio-demographic characteristics, although this will not provide answers to what impact the cultural differences have on attitudes to real credit and the market potential for developing mortgage finance.

5. Formalization of property rights: Collateral value or Collateral damage?

5.1 On the discourse of De Soto in “The Mystery of Capital”

Famous for drawing wide attention to the topic of collateral is De Soto, whose works are all permeated by the issue of “collateral”, although he applies a different terminology in his analysis of the evolvement of property rights and of the informal sector in the developing world. His appealing messages have struck an ore of energy by lifting issues of formal property rights up from their rather un-noticed existence to the debate in the upper political sphere.

De Soto has been successful in communication. Especially through his 1993-article in the Economist and later on through his book, “The Mystery of Capital”, he has managed to reach the ear of many top politicians and to raise the awareness of the role of widespread, secured and tradable property rights in combating poverty. He has toured the world and engaged world leaders. De Soto has been widely applauded among land professionals, (Onsrud, 2004, http://www.fig.net/pub/monthly_articles/september_2004/onsrud_september_2004.htm), but has generated much critique from other sides.

Thereby, De Soto’s work has exerted substantial impact on the agenda of international development institutions, professional associations and interest organizations. His ideas have also impacted national policies, e.g., human settlement plan of 2004 in South Africa, as demonstrated by Royston, 2007.

At the same time “The Mystery of Capital” has evoked criticism and a rich debate on pro-poor land and housing policies from many sides of academia and NGO’s. This is so more remarkable, that there have rarely been similar debates on the issue of formal property rights with such wide participation. The debate over de Soto’s messages has raised questions both on matters of principle and their application in a given country context. As an example, a colloquium was held in June 2006 in South Africa with the title of “*Are Hernando de Soto’s views appropriate to South Africa?*”, but papers delivered at the colloquium also covered issues of general relevance. Others have examined the “de Soto effect” on cross-country data through economic modeling (Besley and Ghatak, 2009).

De Soto uses rather pompous statements on capitalism, with reference to the ideological battle between the socialist block and the Western democracies and market economies. The subtitle, “Why Capitalism Triumphs in the West and Fails Everywhere Else”, is not exactly modest nor designed to convince the skeptics.

“The hour of capitalism’s greatest triumph is its hour of crisis.” ... “Capitalism stands alone as the only feasible way to rationally organize a modern economy.” P.1 “As all plausible alternatives to capitalism have now evaporated, we are finally in a position to study capital dispassionately and carefully.” (de Soto, 2000, p. 13)

“The Mystery of Capital” is penetrated by optimism and a belief in a rather straight forward solution to overcoming the poverty trap of the developing world through fixing the problem with deficient property rights. His dream is that the poor inhabitants in the developing economies counting as many as five-sixths of humanity shall have title to their houses and thereby produce sufficient capital to make their domestic markets work (ibid., pp. 6-7).

However powerful that idea might seem, oversimplification is one of the general objections to de Soto’s analysis and proposals. And he has many opponents, see Daley and Hopley, 2005.

Some of De Soto’s ideas emphasise the role of institutions and transaction costs, while others concern the transformation of ‘dead capital’, alias formalisation of property rights. At the core of the debate is exactly the question of formation of collateral, for which reason chapter C.5 is devoted to discussing De Soto’s ideas.

Since De Soto is a Peruvian economist, land titling projects in that country have attracted special attention, and Perú is frequently part of comparative studies, but it can be mentioned that Columbia was pioneering mortgage securities in Latin America (Buckley, Kalarickal, 2005, p. 251).

5.2 Concepts and Terminology

The central terms in De Soto's works are "capital" and "capitalism", and he has coined a new term "dead capital" to connote the real assets outside a formal legal system. It is here presumed that de Soto has applied the term, capitalism, as synonymous for the term "market economy". As an economist de Soto, is well aware of the standard interpretations of the term economic "capital", which is looking beyond its physical dimensions into the potential it holds.

Definition, Capital: "*in economics, a stock of resources that may be employed in the production of goods and services and the price paid for the use of credit or money, respectively.*" (de Soto, 2000, p. 42)

He cites its etymologic origin (caput – head, cattle), and suggests an interpretation with highly figurative qualities, emphasizing the mobile nature of capital, and its ability to reproduce itself:

"In medieval Latin, "capital" appears to have denoted head of cattle or other livestock, which have always been important sources of wealth beyond the basic meat they provide. Livestock are low-maintenance possessions; they are mobile and can be moved away from danger; they are also easy to count and measure. But most important, from livestock you can obtain additional wealth, or surplus value, by setting in motion other industries, including milk, hides, wool, meat, and fuel. Livestock also have the useful attribute of being able to reproduce themselves. Thus the term "capital" begins to do two jobs simultaneously, capturing the physical dimension of assets (livestock) as well as their potential to generate surplus value. From the barnyard, it was only a short step to the desks of the inventors of economics, who generally defined "capital" as that part of a country's assets that initiates surplus production and increases productivity." (ibid., pp. 40-1)

Nevertheless - after having introduced the exact etymology of the word "capital" - he also attaches to the term a mysterious cloudiness, ref. to the book title. The mystery of capital stems not so much from the concept per se, according to de Soto, as from a widespread lack of understanding or awareness of the true nature of capital (De Soto, 2000, pp. 10-13).

The main mystery is the question of why property law does not function outside the West. De Soto states that capitalism has an ability to produce capital, and capital is the force that raises the productivity of labor and creates the wealth of nations (p. 5). As such the disability to produce capital explains, according to de Soto, the status of poverty. This is so, because immovable assets not represented in the legal system (i.e. outside the bell jar) cannot be used as a base for issue of shares or bonds to obtain new investment and finance. Without representation, these assets are "dead capital", according to De Soto (ibid., p. 6).

The terms "Production of capital" and "capitalism" carry distinct references to the works of Marx <http://www.marxists.org/archive/marx/works/1864/economic/index.htm>, so De Soto returns "the serve" of Marx by playing the ball back into the same playing field. It appears that De Soto responds to the Marxist paradigms by using the same terms in his discourse on the benefits of "producing capital" for the poor masses in the poor countries (ibid., p. 5).

In effect de Soto's "capital" seems to be a term covering various aspects of collateral: the property rights which can be pledged in a formal system, and the collateral value of housing assets, as well as the liquidity arising from real credit and securitization.

Critiques of De Soto focus on other dimensions of housing assets of critical importance for the poor. As an example, Kecia Rust has contributed to a deeper understanding of housing assets by illustrating its components in a triangle (Rust, 2007, pp. 46-50):

1. Housing assets as social assets

- Family safety net, citizenship-building, neighbourhood consolidation;
- 2. *Housing assets as economic assets*
 - Sustainable livelihoods through income generation: home based enterprises and backyard rentals;
- 3. *Housing assets as financial assets*
 - Inheritance, household wealth and equity potential, access to finance.

The social and economic functions can be achieved, at least to some degree, through informal arrangements, and De Soto has been much criticized for paying too little attention to these functions. The third dimension includes the use of formal property rights as collateral for mortgage credit, but this function depends on an appropriate legal framework, an aspect not represented in the triangular model above.

Rust questions if assets in the extralegal sector are really “dead capital” with reference to function of housing assets as economic assets also when held informally.

“The *economic* component of a housing asset comprises its income-earning potential and the extent to which it can contribute towards sustainable livelihoods. In the context of high unemployment, income that can be earned from housing, either through home-based enterprises or offering accommodation for rent, becomes extremely important. However, in many instances the quality of the structure supporting the income-earning opportunity is poor. This suggests an opportunity for investment in improving the structures concerned (and therefore an opportunity for incremental, non-mortgage housing finance).” (Rust, 2007, p. 47)

Clearly the role of each of the three dimensions varies depending on the nature of the housing asset. In the case of housing of the poor with little market value, the main role of their housing is social - and possibly also economic, as described by Rust, in which case “capitalization” is less relevant. It follows that the debate on mortgage credit and collateral needs be differentiated depending on the character of the housing assets.

It is suggested here, that one of the most critical shortcomings of the works of De Soto is a lack of segmentation of the urban sector, property markets and income groups. His thesis may apply for some segments of the property markets, but not for others. Many writers dispute that title deeds improves the poorest segments’ access to real credit, so the issue is rather about classification of property and market segments.

5.3 De Soto’s case for formalization of property

De Soto’s agenda takes its point of departure in the necessity of establishing an all inclusive standard legal system built upon the nature of social contracts governing the de-facto property rights.

De Soto underlines that property is a legal concept, not a physical one, but the legal concepts need to be based on “a consensus between people as to how those assets should be held, used, and exchanged” (p. 157). One should not fall into the technical trap of considering surveying and mapping as the complete solution to the problem of informality. “It is law that connects assets into financial and investment circuits. And it is the representation of assets fixed in legal property documents that gives them the power to create surplus value.” (p. 157). Thereby, the core of de Soto’s discourse is one of formalization of property with emphasis on socially adapted laws.

“Lifting the bell jar, then is principally a legal challenge. The official legal order must interact with extralegal arrangements outside the bell jar to create a social contract on property and capital. To achieve this integration, many other disciplines are of course necessary: Economists have to get the costs and numbers right; urban planners and agronomists must assign priorities; mappers, surveyors, and computer experts are indispensable to make the information systems work. But ultimately, an integrated national social contract will be concretized only in laws. All other disciplines play only a supporting role.” p. 158

The point is made not to import laws blindly, that mandatory law without consideration of implementation is no solution, but build an inclusive legal framework based on legitimacy in consistence with current social contracts, etc.

Few are likely to dispute the importance of sensitive and sensible legislation, which takes into account the specific development of a country. Rule of law has also become a consensus objective of development policies.

De Soto describes the reasons of legal failure (p. 154-5), and put his finger on a number of misconceptions of why formal law has failed based on research of incredible amount of steps in legal procedures and costs of registering in a formal system in selected countries. He demonstrates the deterrent effect of insurmountable transaction costs in malfunctioning bureaucratic systems, and what determines whether you remain outside the formal sector is the relative cost of being legal. In this respect De Soto confirms the importance of transaction costs for economic development in accordance with North (North, 1990).

De Soto is also aware of other benefits of a formal property regime, although these other dimensions are not emphasized in the overall discourse for formalization: E.g., levying of taxes for creation of reliable and universal public utilities.

“These assets can also provide a link to the debts and taxes, the basis for the creation of reliable and universal public utilities, and a foundation for the creation of securities (like mortgage-backed bonds) that can then be rediscounted and sold in secondary markets. By this process the West injects life into assets and makes them generate capital”. (De Soto, 2000, p.6)

Hereby de Soto illustrates that it is a general misunderstanding that informality is about avoiding paying taxes, and shows, that the extralegal sector is paying high costs for being informal, e.g. in the form of bribes: An example from Perú shows that about 15% of the gross income from manufacturing is paid out in bribes (P. 155). Most people also remain in the informal sector because of the excessive time, cost and legal barriers for being formal due to bad legal and administrative systems (p. 156). Instead people rely on local social contracts as a logical choice under the given nature of the formal system.

A strong point in the discourse is the case for economic scale of reform and the opportunity costs of non action. It is indisputable that informal housing development is a topsy-turvy world of first construction, then establishing infrastructure, like putting on your shoes first then your socks. Thereby the accrued cost of informal urban development is much higher than a systematic, rational urbanization process. For this reason de Soto argues that formalization will open the opportunity for low-cost housing programmes.

“..., bringing the extralegal sector inside the law will open up the opportunity for massive low-cost housing programs that will provide the poor with homes that are not only better built but much cheaper than what they themselves have been building in the extralegal sector.” (De Soto, 2000, pp. 191-2)

This is important! One may add that a formal housing development will also open for formal housing credit, with the potential lowering of barriers for accessing housing for lower income segments of society, albeit not the poorest.

Within the area of formal law, de Soto makes the case for formalization of property rights with a focus on the property of the poor, who are not able to access the current formal systems, i.e. those outside the “bell jar” of the formal system. These huge sections of society hold assets in defective (legal) forms, since houses are built on land, whose ownership is inadequately recorded (p.5-6). Why should these assets be registered? For two reasons mainly: to allow trading outside of narrow local circles, where people know and trust each other, and for use as collateral for a loan taken, needed e.g., for an investment. It can be seen that here, de Soto explicitly mention the use of property rights to serve as collateral for a loan and as backing for creation of securities, a process which in other places appear to be described as “production of capital”. Hereby he establishes the link to the capital markets.

“Because the rights to these possessions are not adequately documented, these assets cannot readily be turned into capital, cannot be traded outside of narrow local circles where people know and trust each other, cannot be used as collateral for a loan, and cannot be used as a share against an investment.” P. 6:

In his suggestions on how to getting to the situation of formalized property system De Soto is actually suggesting approaches much akin to NGO approaches: going to the field, listening to the social realities, mobilizing the poor, understanding the underlying social contracts and work towards creating a genuinely legitimate and self-enforceable regulatory framework (p. 186). However, it is more problematic exactly how he suggests such profound reform processes to be conducted.

De Soto suggests a strategy illustrated by a bridge resting on three pillars leading from the extralegal sector with dead capital to the legal sector with live capital (Fig. 6.1, p. 160). Hereby, it is suggested that capitalization, the transformation of dead capital to live capital, goes through three strategic phases:

- A. The discovery strategy
- B. The political and legal strategy and
- C. The operational strategy

Details on sub-processes of each strategic pillar illustrate the challenges involved. Many processes are desirable, e.g., “B.4 Build consensus between legal and extralegal sector”, but do not represent a recipe for reform. Rather, the illustration may remind everyone about the overwhelming challenges of full reform.

De Soto’s “legal transformation” bridge represents a systemic view. Seen from the perspective of the individual household, other metaphors may illustrate an upgrading process, e.g., “climbing of the housing ladder”, (Rust, 2007, p. 47). The ladder is illustrating the steps to go, when a household seeks to get lifted out of the second (informal) economy.

Rust explains how the financial component of the housing asset becomes important, when a household wants to improve its housing conditions and climb the housing ladder – ie, sell their current home and buy a better one. In such cases people may capitalize the value of possible improvements, they have made over time. Clearly, the more their original home sell for, the more they can afford spending on the next one. Prices on the property market depends on many factors beyond the quality of the home, especially utilities/services, neighbourhood and, of course, demand. Therefore climbing the housing ladder depends on a functioning secondary property market, which again is linked to a functioning legal system that allows property to be traded at low risk beyond the trusted circles of relatives and friends (ref. to Rust, 2007, p. 51, “The ideal South African housing ladder”).

In consequence one may conclude that the mechanism of improving household living conditions through climbing the housing ladder supports the case for formal property rights, but notably justified on grounds of building a sound secondary market, rather than on collateralization and mortgage. This includes incentives to continuously maintain /improve the current housing stock.

Irrespectively, a focus on formalization property is inadequate for addressing the challenges of different development paths and complicated social structures. Titling cannot stand alone and is no “silver bullet” for overcoming poverty (ref. Tomlinson, 2007).

Tomlinson (2007, p. 18) argues, that De Soto is neglecting the role of different development paths and is oversimplifying the problem of economic empowerment by linking it only to the lack of titles. This is a call for a more refined and adopted reform process, but still including registration of property rights.

De Soto on reform agents

De Soto recognizes that implementation of legal change is a political responsibility (de Soto, 2000, p. 158), while at the same time seeing signs of resistance to change among the key professional groups of lawyers, surveyors, etc. In this quest of overcoming the resistance are required not consultants committed to serving their clients but talented politicians serving their people (ibid., p. 159).

Hereby de Soto identifies the pivotal role of the elite. He is seeing the need for “Coopting the Elites”, but it is less clear who are the reformers, and how the support of the poor will be revealed and manifest (ibid., p. 191).

“Once the economic potential of the poor – the largest constituency in the nation – has been revealed and their support for reform is manifest, reformers will have the attention of the elite. This is the moment to break their illusion that lifting the bell jar benefits only the poor. This kind of legal integration can help almost every interest group in the nation.”

De Soto’s analysis of the potential stakeholders for reform the outlook does not look too bright: De Soto considers that no group is better positioned than the group of lawyers – aside from terrorists – to sabotage capitalist expansion (ibid., p. 197). The technicians tend to consider land titling a technical problem, and

some governments continue to view mapping as the cornerstone of property (pp. 201-2). He sees the danger in reducing resource management to a geographical information system (GIS) problem. “Technology is attractive; it produces tangible results. But it is only part of the solution”.

“The propensity in some countries to squeeze the issues related to property into the departments of mapping and information technology has obscured the real nature of property. Property is not really part of the physical world: its natural habitat is legal and economic.”

So the key to change rests with the political leadership. The goal of reform, according to de Soto, is to award property rights for millions of assets to millions of people in a short time. Consequently an important component in the reform strategies proposed by De Soto is – not surprisingly - about political commitment and communication (ibid., p. 205).

In fact his writings have inspired politicians and development agencies, although the justification of land titling programmes conducted during the latest decades have come from many sides.

5.4 Lessons learned on titling and formal credit in poor neighbourhoods

Studies of titling programmes in different countries have shown that there are benefits arising from titling: Clean titles raise the value of the property, households invest more in their property, proprietors may enjoy added value through economic use of the property for business activities, and secure property rights may even reduce fertility. However, increases in access to credit for the poor are small and insignificant like in the South African case (Kimney, 2007, p. 15).

Tomlinson (2007) acknowledge that a house is by far the most important asset owned by the vast majority of households, especially if they are able to benefit from capital appreciation. Eventually formal property may be used as collateral for business and other loans, but she suggests that property rights to housing help to alleviate poverty in other ways by serving as a basis for economic activities, or if their owners rent out some space for either residential or commercial purposes (Tomlinson, 2007, p. 18).

Reference is made to the experience of South Africa, where large deprived groups have been provided with freehold title to land and subsidized houses (ibid., p. 26). Even with formal titles a large section of the poor households are unable to access mortgage credit, due to too low incomes or lack of formal employment. In 2001 nearly 80 per cent (or 8,7 million) of 11 million South African households earned less than R3.500 (about USD 500) a month (ibid., p. 18). Therefore, this underlines the fundamental importance of income in ‘affordability’ of credit.

Furthermore, previous attempts to extend housing credit to low-income black South Africans in the late 1980s and 1990s resulted in high levels of defaults (33.000 households) and foreclosure cases, which were partly triggered by steep increases in interest rates and unemployment. As a result mortgage lending to poorer households exposed them to high risks of losing their property, and the banks have abandoned the lower segments of the housing finance market due to high risks and losses.

Instead more appropriate forms of credit are being developed by microfinance institutions as described by Tomlinson (2007, p. 21): “Micro loans have not only turned out to be better suited to the needs of lower-income borrowers, but also as better options for lenders”. On the other hand lack of titling creates dysfunctional secondary property markets, which means that households were unable to realize the value of their property in the market.

On this background, it is concluded that there is not much evidence that giving the poor title to their assets will unleash the mysterious power of capital, nor increase the rate of economic growth in the way suggested by De Soto, because property titles of the poor will rarely be used as collateral for mortgage credit. However, titling will in other ways improve their lives, “*a good enough reason to do it*”, as Kimney remarks (McKimney, 2007, p. 15). It may also be assumed that a secondary market will gradually arise, and that access to real credit may be an option used on the longer term for some households.

Lessons learnt from ten years of low-income housing finance in South Africa suggests that factors of importance for the housing sector and for access to housing finance are (Tomlinson, pp. 20-28)

- Decreasing HH size has greatly impacted on the housing backlog
- Higher unemployment rates have put pressure on household income
- Changes in interest rates have had devastating effects for low income households
- Borrowers had insufficient knowledge of financial commitments
- Traditional banking practices were unsuccessful in the low-income credit market
- The lowest section of the housing market is simply dependent on social contributions and development assistance.

In the case of individuals with a mix of personal resources and skills, other credit products have been developed:

- Lenders have good experience with extending credit through arrangements with employers, rather than by use of collateral;
- Use of pension funds as security for credit is a functional option for lenders to secure loans, because recovery of outstanding funds can occur without the costs of a foreclosure process;

A large number of studies suggest more sensitive approaches to tenure upgrading, and international donors and NGO's have adopted pro-poor land policies, as for example (FIG, Publication no. 45, 2010).

Regardless, it cannot be questioned that capital markets require secure and good collateral, and domestic markets depend on sufficient capital, as has been illustrated through the credit crunch and financial crisis of the 2007-2009 (Ferguson, 2009, Geanakoplos, 2010).

Collateral remains an important issue, but not for the poorest housing segments.

5.5 Concluding Comments to the De Soto Debate

It is suggested here, that the shortcoming of De Soto's works is not so much in his analysis although it is over-simplistic, as in his proposed solutions.

He suggests that "the poor are not the problem but the solution", and that what the poor are missing are the legally integrated property systems, that can convert their work and savings into capital (de Soto, 2000, pp. 226-5). Hereby De Soto mixes the meta, mezzo and micro levels of society: the poor countries, the poorer segments of society and the poorest households. Thus, if by "the poor" he suggests to remedy poverty by focusing only on the poorest segments of societies in developing economies, I would suggest that his analysis and proposals are deficient for the reasons mentioned above.

Through this focus he disregards the fact that it is not only the poor in informal economies, who are outside the formal system, and that lots of informal land transactions conducted by the well to do may also lack legitimacy or be outright illegal. I would like to suggest that these factors need urgent attention by integration into the formal sector, not only for the mentioned justification of formalization, but also to stop further exploitation of the poor and misappropriation of national /common resources, which rightly should benefit all.

Therefore, it is suggested that the strategy of focusing on the poor in building the formal sector is lacking the following perspectives:

Firstly, the poor informal sector is the result of dys-functioning urban systems. Curing the problem is about establishing better urban systems in the first place, rather than focusing on the symptoms.

Secondly, by a complete focus on the poor, de Soto is closing his eyes for the resources of the richer segments of society in the developing world. I would like to suggest that formalization of the upper and middle sectors of the economy at first opens the door for real credit to a section, who can better afford it, and for levying of property taxes on those segments, who have benefitted from previous disorder and asset appreciation, and for controlling further speculation and land grabbing. In this way a top-down

comprehensive formalization strategy would help finance the building of necessary services and the necessary urban infrastructure for all areas, and thus provide value to the poorer segments of society, as well.

What counts for the poorest segments of society, particular slums, is not the ability to capitalize their assets, but the use of their property as living space and livelihood as demonstrated by many studies (Payne, et al., 2007, Daley, Hogley, 2005). Thus infrastructure (water, sanitation, electricity, roads) are a priority above individual titles, although access to long term credit is important in other areas. Moreover the poor also needs to be protected against the fierce forces of the market (Haldrup, 2004). But financing of infrastructure and planning is usually a local government matter, which rely on collection of taxes. In this endeavour, property taxes are critically important, which makes basic registers a priority. In due course, it is suggested formalization should naturally include every area and everyone, but through incremental strategies.

From an economical perspective, I would like to suggest that the case for formalization of property may therefore be built on two main arguments:

1. Infrastructure and taxation argument: Formalization of property rights for establishing property tax registers and levying of basic taxes, to allow for control of speculation, and for establishing proper urban infrastructure and thereby improve living quality for all sectors of society, including the poor
2. Market and collateral argument: Formalization of property rights for creation of the foundation for operations of the property market with lower transaction costs and risks, and for pledging the property rights as security for mortgage credit, particularly relevant in the middle and upper segments of society in the first phase.

The weighty justification for formal land registration in respect to orderly land management is a long-term commitment with massive impact on land economy in general.

Moreover, De Soto calculates the costs of formalization within the existing malfunctioning systems, but he does not move on to calculate the more difficult issue of *opportunity costs* of being informal: What are the additional costs of doing the urban development process in reverse order? What are the losses in welfare for a nation not having access to formal credit, and where all transactions are burdened by risks, and informal costs, e.g. bribes? Etc. I would suggest that these costs are much higher than the direct costs are, because they arrest development at a barter stage.

The perspective of opportunity costs of non-action draws the attention to the time factor. Actually De Soto stresses the time factor: that transformation to a formal system occurs at a fast rate through a massive standardized process (de Soto, 2000, p. 205). It is suggested here that the time factor needs more attention in particular seen in relation to strategies, implementation costs and opportunity costs of non-action.

Also for this reason, it is suggested here that the strategy of overcoming the informality challenge, goes through a first step of formalizing the richer sectors of urban and peri-urban areas, in a top down approach which would allow generation of resources for further expansion of the formalization process. I would argue, that it would be to the benefits of the poor at an early stage, when formalization generates resources for proper infrastructure and services, and by curtailing exploitation and misappropriation of common resources. While policies to assist the poor neighborhoods seem sympathetic to most and do not pose risks to the elite, a top down approach as proposed might encounter stronger political barriers.

In the end, the case for a formal legal system with formalized property rights seems to be strong, but while the theoretical calculations of the potential cost-benefits of a formal system are likely to be convincing, they may be in vain, as long as there are vested interests in the economic and political elite, who benefit from the disorder (Sonin, 2003).

The idea that good governance is a consensus issue, is also questioned by Onoma (2010) on the basis of field studies in African countries. The assumption on which most land administration reform programmes are based, incl. the 'Land Administration Project' in Ghana, is that all parties desire stronger institutions that govern land rights when land becomes more valuable, in order to reduce transaction costs, etc., but Onoma

has shown that is not the case, e.g., in some areas of Ghana, where chiefs benefit from controlling cloudiness of titles.

Irrespectively, the urgency of mobilizing the capital value of real assets through formalization is growing, whatever terminology is attached, an issue becoming increasingly clear with accelerated urbanization, and the demonstrated squeeze in the capital market in the global financial crisis. Urbanization requires investments. Urban infrastructure must be established through rational and large scale investments. Urban infrastructure depends on generation of tax income. Collateral value depends on urban quality and infrastructure. Investors seek secure investments based on good collateral backed by reliable legal systems. No such activities can take place without setting the house in order.

All these requirements are interconnected, and are eventually dependent on legal reform and formalization of property rights. The question is what to do first and how to build a sustainable reform. Here it is proposed that a formalization strategy work top down in a segmented fashion, and that such strategies may carry promise for mortgage finance development in tandem with economic development, which will eventually extend to larger sections of society. This must not exclude taking other measures in parallel of upgrading deprived urban areas according to best pro-poor practices.

6. On Property Rights, Collateral and Economic Development

6.1 Property Economics and Economic Development Theories

Another theory launched under the captive name of “Property Economics” is commented here, because of its focus on the concept of ‘collateral’.

“Property Economics” was launched by an interdisciplinary group but dominated by economists (Steiger et al., 2008). Their contributions have been found relevant for the debate on mortgage finance, property rights and economic development, due to their analysis of formal property rights allowing property to be pledged as security for credit. They argue that the collateral mechanism is central in explaining the theory of money and interest, and that money creating credit contracts trigger economic development.

Steiger et. al see their ideas in comparison with the New Institutional Economists, and respond to their visions on reform of informal property rights regimes. Thus, the issues under debate are closely related to the formalization debate taking place in the circles of land professionals.

The general ideas of property economics are introduced with a short reference to areas, where the theory challenges other theories on property rights and economic development. However, it is understood here - with reference to Sala-i-Martin (2008) and Reinert (2006) - that economic development theories are non-exclusive, so each group may shed light on different aspects of the complex topic. It is not the intent here to challenge any of the theories, but from their works to reap ideas and visions seen as useful and inspiring to the present study.

The name of ‘Property Economics’ should not be confused with ‘Land Economics’, a professional field much akin to land management, but including the economic and socio-political dimension. Land economics was founded in the US by Richard T. Ely, who in his writings was much concerned with social issues and the distribution of wealth (Ely, 1914).

Despite his many valuable observations, Ely does not seem to have been much aware of the function of societal effects of the function of mortgage pledging, because he was seeing it as a simple personal claim of no relevance for the wealth of the nation: “*Annihilate the mortgage and society is neither richer nor poorer; what the one person loses the other gains.*” (Ely, 1914, Part I, p. 23).

The property economists take a different stance on mortgage pledging. Heinsohn (2009, p. 12) states that it is indebted proprietors, who constitute the market. A commitment to repay a mortgage debt demands generation of an added value in order to repay outstanding debt *plus* interest. This observation is consistent with the simple fact all borrowers have to face: the necessity to keep working and generate additional value, until the mortgage is paid.

6.2 The role of Collateral in the Capital Market

The Property Premium

According to Steiger (2008, p. 214) the capital market differs from the general market of goods of services, because the cost of money (the interest rate) in the capital market is not only set by demand and supply, but also by risk, which is determined by level of security of collateral. Furthermore, unlike in the sales market, there is asymmetric distribution of risk between the contract partners. But even if there were symmetric information available, the credit risk will always rest with the lender, so therefore collateral security is required in all case.

In order to understand the contribution of “Property Economics” in regard to credit and collateral, it is necessary to look at their underlying analysis of “What is money?”

The key question in economics, “What is the loss that must be compensated by interest?” is at the centre of the property economics’ theories (Steiger, 2008, p. 184). Their advanced answer to that question and their

contributions to the theory of money and interest become of relevance here, due their discussion on the role of collateral and good securities for credit. It is noted that their definition of property rights and collateral embrace all types of assets and burdening of assets.

To start with definitions: Steiger and Heinsohn look beyond the physical goods and resources of real property and focus on the intangible elements of property, foremost burdening and encumbrance. They underline the distinction between possession and property, and focus on the *added* value associated with a formal (legal) property regime, with emphasis on the right to encumber property rights for obtaining money. This added value of property compared to possession provides the proprietor with a “property premium” (Steiger, 2008, p. 184-5), which they define as “a non-physical yield in the form of the potential to burden assets to create and loan money, or to borrow it” (Steiger, 2008, p. 192), a definition stretching over the full chain of collateral of lenders and borrowers.

Experience with land titling projects supports this notion. Studies on the effect of titling have found that formal title increases property value with typically 25% (Payne et al. 2007, p. 15-16) citing various country case reviews, but the appreciated value may reflect different effects of improved security.

A property premium is automatically added, when property titles are established through a legal act as an addition to possession rights. (Note this is an imprecision in their texts, because possession rights cannot exist without property rights (however undefined), but it is a question of their specificity, formalization and protection by the state). This legal change occurs as a discontinuous change, not an incremental one.

The concept of “property premium” plays a central role in their explanation of the monetary concept, *interest*. Their analysis stands in contrast to other explanations of the causes for “interest”, such as a compensation for a temporary loss of goods, or a temporary loss of money /liquidity.

Some of their key statements illustrate the underlying train of thought:

“Both in the money-creating and money-forwarding loan contract, assets must be burdened and encumbered.” (Steiger, 2008, p. 184)

“The creation of money cannot be separated from the process of loaning it to a proprietor-debtor.”

“..., *money is created in a debt contract but is not itself a debt.*” (Steiger, 2008, p. 194)

In a mortgage contract, both the assets of the borrower and the lender are at play: the borrower pledges her property to serve as collateral for the loan contract, which - on the side of the lender- is backed by the lender’s (bank’s) own capital serving as collateral (Steiger, 2008, p. 193-4) vis-a-vis the central bank, in accordance with financial regulations. The borrower achieves a liquidity premium, but in order to be able to repay the money, the borrower must first employ the money advanced and generate *additional* value, to be able to repay *both* loan and interest. Thereby, additional net wealth is provided to society, which results in an accumulation of real assets so characteristic of a property based economy, according to this theory (Steiger, 2008, p. 195). It can also be seen that the loan contract forms a commitment to production on the side of the borrower. The proprietor only pledges her property, but continues undisturbed having the possessory rights to the use and enjoy the returns thereof.

It should be added, that collateral will be exchanged only when the borrower cannot fulfill her obligations, as in the case of foreclosure (Steiger, 2008, P. 214) in accordance with the inherent nature of mortgage pledging.

What further explains the rate of interest is the fact that “Securities used as collateral in a credit contract are never risk-free.” The rank of a security plays a role in the determination of the (market) rate of interest, since a *risk premium* is added to the pure level of interest, according to Steiger and Heinsohn (pp. 198-199), a pricing mechanism which seems to be in line with the operation of the capital markets with differentiated interest rates.

In other words, property economists regard the *property premium* as opening for the access to money creating debt contracts, which function as drivers of the economy. They also emphasize the role of good securities as determinants for the cost of credit, because the cost of money (the interest rate) in the capital market is not only set by demand and supply, but also by risk (Steiger, 2008, p. 214).

Money Creating Debt Contracts

To illustrate the principle of a money creating debt contract follows a simplified version of Steiger's explanation of credit contracts and property premiums established through a credit chain (Steiger, 2006, p. 185).

The story of money starts with the central bank, which is serving as the issuer of the money of account and lender of last resort, and initiates a credit chain among proprietors. In the money creating credit contract between the central bank and a commercial bank (financial institute), the central bank has to obey two rules: (i) Secure its loans, and thereby, safeguard its reserves or "own capital" by claiming collateral from the commercial bank, and (ii) burden its own liquid capital so as to be able to withdraw notes in case of any debtor's default, and thereby guarantee the circulation of the notes forwarded (Steiger, 2006, pp. 184-6). Point (ii) implies that the bank of issue incurs a loss of property premium by burdening its capital during the loan duration, which is compensated by the rate of interest charged to the commercial bank, according to Steiger.

This is a mechanism repeated in the next link of the credit chain, the credit contract between the commercial bank and the borrower: The bank loses liquidity premium as well as property premium (since they block basic capital) and the borrower blocks property premium by encumbering property but gains a liquidity premium. These temporary "losses" of the lenders are compensated by interest. As can be seen, money is issued not only against interest but also against security of own capital, collateral or capital coverage (to constitute a minimum % of outstanding debt). As it can be seen, this is a different explanation than the classical "real bills doctrine", which is about money representing the value of equivalent amounts of existing goods, previously gold, which in principle can be claimed by the holder of the money bills. The real bills doctrine is referring to goods already produced, the credit definition to future production.

Steiger and Heinsohn argue that money is created always as creditors' money, and never as debtors' money, since the latter would be equivalent to printing money.

They also illustrate that in order to engage in such money creating contracts (credit contracts), nothing is more vital than first-class collateral and sufficient own capital (Steiger, 2008, p. 217).

Collateral in Property Economics

The mechanism of burdening and encumbrance of property in credit contracts serves as a trigger of economic development, according to Steiger. If it is correct that money is created through a debt contract, and collateral is the precondition for the credit contract, and the credit contract allows - requires - that additional value be created by the borrowers in order to repay debt and interest, thus contributing to growth, then the question, 'if collateral is pivotal for economic development?' could be answered in affirmative.

However, the reverse mechanism may also occur: Capital markets emerging as products of economic development, as and when the necessary levels of production, infrastructure, etc. are available. Heinsohn and Steiger may thereby underestimate the role of institutions, especially the dynamic aspects of development paths in legal systems, as suggested by Nutzinger (In Steiger et. al, 2008, p. 67). As observed by Glud (1951, 146-7) and others, mortgage credit depends on employment and income opportunities suggesting that the causes and effects of capital market development and economic growth are inter-twined.

"The development of securities trading

Organized securities markets and stock exchanges are a product of economic development. In the early years of [economic growth](#), most of a country's industrial units are small and their capital requirements relatively modest. The rate of saving is low, and institutions for channelling private savings into investment are generally lacking. As the economy progresses and [national income](#) grows, new institutions enter the financial picture to direct the mounting volume of savings into productive outlets. The appearance of growing numbers of individual and institutional investors creates a need for trading markets to speed up transactions and enable stockholders swiftly and easily to convert their holdings to cash." (www.answers.com)

Steiger observes, that property based economies (capitalism, market economies) formed by a network of credit contracts enable accumulation and hence economic development, without previous savings, by simply burdening and encumbering assets (Steiger, 2006, p. 185).

Steiger further substantiates the description of property based economies as opposed to possession based economies, by the statement that when property (private property rights) is abolished, then the economy disappears, not the production as such (Steiger, 2006, p. 185): The result is a reversion to an economy based on barter and reciprocity or an economy based on rationing, they argue.

The process of pledging and use of collateral in establishment of mortgage credit contracts seems to be in accordance with general banking practices. From a layperson's perspective the experience of getting the money in hand, when taking a mortgage, seems like money creation. And for certain a mortgage credit contract entails a commitment into the future to be working for paying it back. In this way credit contracts allow consumption to be spread more evenly over the lifetime of a borrower, but under a commitment to create added value.

Whether the explanation of money and credit is a valid theory is for economists to judge. Here it is concluded that if the idea can be confirmed of the money creating process, and the commitment to work for creating additional value, then it follows that economic development is inherent to credit contracts.

The notion of the money creating contracts and the role of collateral can also be argued contra-factually by referring to the US case, when lack of collateral backing credit contracts caused a negative development spiral. At the borrowers' level, there were insufficient collateral value, and the mortgage finance institutions, the Government Sponsored Enterprises, had virtually no capital coverage, ref. to chapter C.7. In this way the role of collateral is illustrated by how low-collateral credit within the US, in the form of insufficiently collateralized debt, even poisoned the global financial system, since the securities were traded on the global capital market packaged within in-transparent financial products, resulting in a widespread fear among investors of sitting on unsecured debt, an effect beyond the scale of the original defaults.

The property economists are predominantly academics without field experience. They do not provide guidance (with the exception of Hernando de Soto) to practicalities of implementation beyond the ideas and principles mentioned. One may even say that their policy recommendations for development in the developing world fall short of reaching more applicable conclusions, than those they criticize in e.g. (Steiger, 2008, 197-202).

6.3 Financial Experts View on the role of Property Rights Protection for Financial Systems

Clear evidence of the role of property rights for mortgage finance development is provided by economists, who do not only link mortgage finance to mortgage pledging on a specific level, but sees the development of secure property rights at large and of primary markets as a precondition for development of mortgage finance system.

Warnock and Warnock analysed data from a sample of 61 countries including both developed countries and a wide range of emerging economies (Warnock and Warnock, 2007). They found across all countries, controlling for country size, that countries with stronger legal rights for borrowers and lenders (through collateral and bankruptcy laws), deeper credit information systems, and a more stable macroeconomic environment have deeper housing finance systems. In developed economies they found that variation in the strength of legal rights helped explain the extent of housing finance.

In this way there is statistical evidence of the prime importance for mortgage market development of developing the underlying legal system and the formal land registration systems.

Sheng et al. (2006) are even more explicit in their analysis of the mortgage markets in Hong Kong with recommendations for China. They argue that a well-functioning capital market requires clear delineation, efficient exchange, and effective enforcement of property rights, and that these functions rely heavily on

supporting property rights infrastructure (PRI). Sheng describes PRI as systems that delineates, registers, transfers and protects property rights within a legal jurisdiction.

If parts of the systems do not function properly, then the whole may not be effective, and if there are inefficiencies in the real sector, they will be reflected as weaknesses of the financial sector, through non-performing loans, according to Sheng (*ibid.*, p. 4). They attach high significance to availability of information on properties.

Chiquier, Hassler and Lea (2004, p. 33) reviews mortgage securities in emerging markets and on the basis of a cross-country analysis of about 30 countries, conclude that a country must have a sufficient legal, regulatory and market infrastructure before mortgage securities can be developed, but add that a good framework is not a sufficient condition.

Renaud (2001) is putting property rights and urban laws at the top of the list, when describing the factors shaping housing finance, and elaborates on its components:

- a) Clarity of Property Rights and Urban Laws
- b) Clarity of ownership and enforceable property rights
- c) Economically sound, market sensitive urban planning
- d) Predictable land development codes & practices
- e) Sound national and local taxation of housing and real estate

Hereby the mentioned economists provide justification for the critical importance for economic development of formal property rights, effective urban laws and information infrastructure.

7. A Few Comments to the Sub-prime Crisis

7.1 Background of the So-called “Sub-prime” Crisis

The US Subprime Crisis and the Mortgage Market

The events of the financial crisis have demonstrated the powerful forces at play in mortgage finance in the capital market and its impact on the real economy, if there had been any previous doubts. The events of the sub-prime crisis are also relevant to the present study for another reason. Many questions raised and lessons learned in the US-sub-prime crisis might apply to the high risk loan markets in the developing countries, as argued by Jaffee (2008), <http://www.growthcommission.org/storage/cgdev/documents/gcwp028web.pdf>.

Subprime is a fitting term – if not an euphemism – for the majority of the urban population in the developing world, who live in poor and deprived urban neighbourhoods and slums. Thus a major share of the huge demand for housing finance in the developing world stems from the market segments of low income households. It is a question how or if mortgage lending can be secured under the conditions found in the urban environments in the developing world and with potential borrowers not bankable, or not even part of the formal economy.

The high urbanization rate worldwide combined with inadequate housing is creating a gigantic demand for housing (finance) on a global scale, so that appropriate development of land institutions play a pivotal role, as observed by Jaffee, (2008, p. 7):

“The dominant bottleneck for mortgage market innovations in emerging economies is an accommodating regulatory and legal system; governments must recognize that the benefits of a mortgage finance system will only be realized if property rights are reliably protected by the state. A sufficient supply of loanable funds is a second critical bottleneck. The banking system normally takes the lead in innovating mortgage lending, but there is a limited supply of deposit funds and many competing loan demands. Therefore, as the mortgage market expands, the banking system inevitably outruns its own capacity to hold all the originated mortgage loans.”
(Jaffee, 2008, “The U.S. Subprime Mortgage Crisis: Issues Raised and Lessons Learned”)

The causes of the subprime crisis are being scrutinized and discussed by leading scholars and in forums like the ‘Financial Crisis Inquiry Commission’ (<http://www.fcic.gov>) with the purpose of diagnosing the crisis for being better prepared to prevent another one to occur. The jury is still out.

Ref: <http://blogs.wsj.com/economics/2010/02/27/academics-on-what-caused-the-financial-crisis/>

For this and numerous reasons, it is infeasible to prepare an overview of the crisis. Instead, a few issues of the sub-prime crisis have been selected for discussion, because of their connection with other questions of this study, in particular matters of collateral security.

Even when approaching the crisis in a fractional manner, one of the initial challenges of understanding the crisis is the selection of sources, because interpretations of events are disputed both among politicians and economists. The presentation here does not claim to have found the right balance, but the underlying sources represent significant contributions to a debate, which is bound to continue for years. After the crisis erupted, it is easier though, to distinguish between contributions that were warning of the risks building up and those who were less attentive to the threats to the economy posed by the US mortgage finance sector.

Definition of subprime

A sub-prime loan is a loan to a borrower with a weak credit history, also called a B and C loan or nonprime loan. Statistically, approximately 25% of the population of the United States falls into this category. It may reflect the credit status of the borrower, the degree of indebtedness, or relate to a weaker collateral security provided. Subprime lending is lending at a higher interest rate than the prime rate.

(ref. <http://encyclopedia.thefreedictionary.com/subprime+mortgage>)

Turano et. al (2006, “Subprime mortgage lending: recognizing its potential and managing its risks”) lists the most common categories in the subprime mortgage segment as:

- Borrowers with a poor credit history;
- Borrowers asking for high Loan to Value (LTV) mortgages;
- Borrowers with a high Debt to Income ratio (DTI);
- Borrowers who cannot document all of the underwriting information in their application.

In this way sub-prime lending embraces different market segments, not only the poorest.

Subprime lending dates back to the 1990’s, but a steep increase occurred as from 2003, and subprime lending peaked during 2005-2006, when it made up about 20% of total new mortgage origination.

(Lea and Hassler, 2008).

Due to their higher risk profile, subprime borrowers have to pay much higher interest rates and fees. Many have been tempted to rely on adjustable rate mortgages (ARM) or non-traditional mortgage products, or so-called teaser loans.

The US sub-prime market has been less supervised than the prime market with originators such as independent mortgage companies being state-chartered although not subject to tight federal supervision. Mortgage brokers were largely unsupervised with minimal incentives to protect the interest of borrowers, who on their side might have been vulnerable and financially “illiterate”. The extent of predatory lending is therefore an important issue in the crisis (www.Urban.org, p. 4), as is negligent underwriting standards. Some of the loans have even been labeled “Liar loans” for their lack of underwriting, or colloquially ‘NINJA’ loans (No Income, No Job, No Assets).

It can be mentioned that the Danish mortgage finance system is vaccinated against predatory lending through having transparent and standardized loan conditions, in combination with the standard conditions of mortgage pledging and LTV’s.

The US market opened up to the prime segment, as well, by offering credit hardly without maximum LTV’s. Borrowers may in some cases have acted rationally – although the moral can be questioned, when legislation had permitted lending up to or above 100% of the value of the underlying property, and if they would be able to walk away from the loan without recourse in the event of default. Thus insufficient regulation on the mortgage lending basics was obviously another troublesome feature of the subprime market.

The Home Ownership and Affordability Agenda in the US

Housing policies representing all sides of the political spectrum pushed for increasing the share of home ownership under different presidents since the 1980’s.

Central to the political agenda was increasing home ownership for the low- and moderate income households and minorities. Because the mortgage industry had already served the prime segments of the housing market, the potential new borrowers were to be found in more riskier market segments and at lower steps of the income scale, in the “sub-prime” segment (Gramlich, 2007).

Homeownership ratios increased in the 1990’s. The most drastic increase in homeownership ratio occurred from 1990 to 2000 with an increase of nearly 4% (from 63,9% in 1990 to 67,5% in 2000). Since then, homeownership has peaked at 68,9% in 2006 but fallen back to 67,5% in 2008.

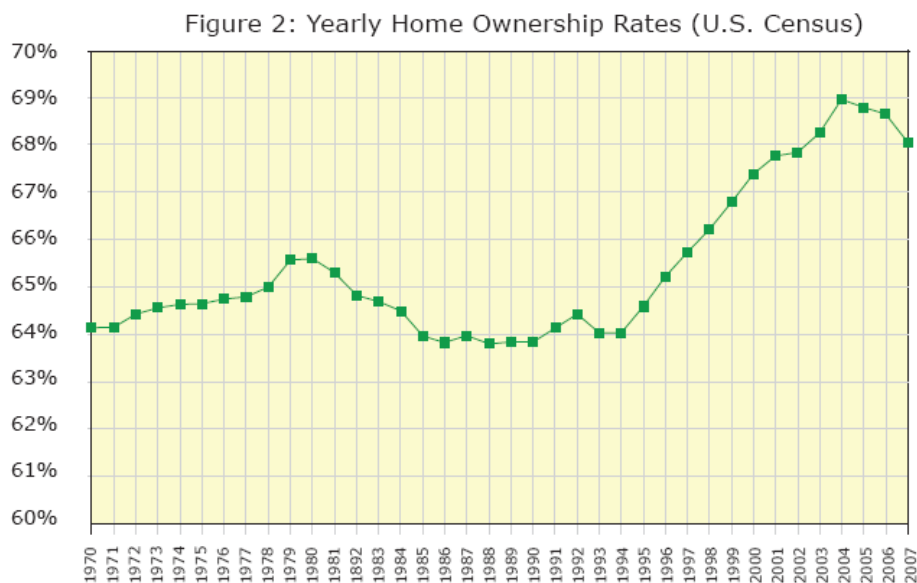


Fig. C.3. Development in Home Ownership in the US, 1970-2007. Source: Graph copied from Liebowitz (2008, *Trainwreck*), but data stems from www.census.gov

At the same time, the market was characterized by dramatic increases in outstanding mortgage debt for homeowners, which doubled between 1995 and 2003, and tripled from 1995 to 2007 (www.census.gov).

This shift in the mortgage market was supported by legal changes and policy incentives, so that a growing number of borrowers were entering the mortgage market without fulfilling the standard conditions for qualifying for credit, as a result of so-called affordable housing policies.

Interest rates were reduced to a historic low by 2003, and new mortgage products were introduced, which were cheaper to serve in the first years, e.g., adjustable rate mortgages (ARMs) and teaser loans.

A common product of artificially affordable loans was mortgages with a low start rate to maximize the loan size, but with a prospect of sharply rising payments. These loans could take the form of Adjustable Rates Mortgages with low rates in the first 2-3 years, and full payments in the next 27-28 years (so called 2/28 or 3/27 loans), (Hassler et al., 2008).

The boom of sub-prime market lending was pushed from grassroots level on one side and from creative mortgage lenders on the other side. In a market with increasing house prices, very low interest rates and without standards of minimum requirements to equity (Min. LTVs) or to loan underwriting, the arena was open to both speculation and to predatory lending stimulated by unhealthy incentive structures of mortgage intermediaries.

A segment of the subprime markets were speculative private investors according to (Liebowitz). Easy access to cheap credit and rising house prices attracted buyers from the prime segment to buy 'to let' or in expectation of making a quick profit. The speculative segmented counted individuals owning one or two houses held for reselling purposed. According to Liebowitz, it is estimated that one quarter of all home sales during the bobble were speculative sales of this kind. With limited requirements to down payments (a high leverage) and with cheap credit available in the form of ARMs etc., it was possible to invest in properties without having own money at stake and with the expectation that property value appreciation would ensure a later profit.

As a result borrowers became highly vulnerable and speculators tried to get out of the market, when the property market bust and prices dropped steeply, since they had little or even negative equity in the property (home) pledged for the mortgage. With widespread foreclosures, it was clear that the property market declined sharply, and that there was insufficient collateral value to back the loans, - if it had ever been there.

It is important to note that subprime is not equivalent to low income lending in the US market, and many low income borrowers had good credit records (so-called FICO scores). However, the use of subprime loans for acquisition of housing was relatively low, and many low-income borrowers borrowed to refinance or for consumption.

Of 8.954.000 subprime loans originated (2000-2006) only 36,6 percent were provided for home purchases (Jaffee, 2008, p. 11).

Some observers point to the role of the unregulated market loan originators (Park, 2008), and others point to the opening for what is called “cash-out” mortgages have helped pushing the mortgage system over the brink.

An open access to refinancing was increasingly used for so-called cash-out refinancing, in which ..*“homeowners treat their homes like savings accounts, drawing out funds to buy cars, boats, or second homes. This became so widespread that by the end of 2006, 86 percent of all home mortgage refinancings were cash-outs amounting to \$327 billion USD in 2006”*, according to Wallison, 2009, <http://spectator.org/archives/2009/02/06/the-true-origins-of-this-finan/print>

Wallison (2009) found that from 2005 to 2007, about 40% of all loans bought (securitized) by Fannie and Freddie were none-prime loans. The outstanding none-prime mortgages held by the GSE’s in September 2008 were USD 1.6 trillion (Wallison, 2009) – compared to a total of USD 10,5 trillion outstanding home mortgage debt in the US in 2008 (Source: The Federal Reserve, Statistical Release, June 2010). And a large share of the GSE’s lending portfolio was in the risk zone of default.

Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac

It is impossible to discuss the financial crisis without mentioning the Government Sponsored Enterprises dominating the mortgage market in the US (see Part A, Chapter 1.X). The government role as a mortgage intermediary had a well justified social origin in the crisis of the 1930’s, but has ended up being an extremely costly enterprise for the US.

The GSE’s had grown to become dominant mortgage intermediaries in the US Mortgage market. Despite the enterprises being government sponsored, the profit was privatized.

The justification of the government role in the mortgage intermediation process was originally part of the affordable housing, as reflected in the regulatory framework: “The Government Sponsored Enterprises Act” (GSE Act of 1992) issued as part of the “Housing and Community Development Act of 1992”, which contains the main rules for secondary intermediaries in the United States, according to UN-ECE, 2005, p. 51. To what degree the GSE’s have fulfilled those purposes is a matter of debate. Wallison (2010) criticized the mix of social goals and financial activities, which he argued was putting the national economy at risk.

The story of the GSE’s include both mismanagement (gigantic accounting disorders in 2003-4) and a mixed story of political lobbying (election contributions) and provision of well-paid positions for influential persons (Boyle, 2010).

Among the critical aspects of the activities of the GSE’s was their declining underwriting standards, and their lack of basic capital. The requirements to capital requirements of the US- Government Sponsored Enterprises (GSEs) were much lower than commercial bank conditions, and since the GSE’s have had lower capital costs than other intermediaries, they have been able to pay higher fees to originators for their mortgages than their potential competitors. In that way they have grown rapidly and taken over large sections of the market. The very low level of capital coverage was observed in UNECE (2005) based on data from 2002, hence credit was known to be relying on the government guarantee.

The competitive advantage of the Government Sponsored Enterprises in the market had been their access to capital at lower interest rates, because they did not have to fulfill the capital coverage requirements of banks,

and in addition their assets were covered by guarantees. In this way they could profit from the interest spread. Originators of mortgage credit could conveniently pass on the credit risk to the intermediary and investors.

The UN-ECE study (2005) described the nature of the Mortgage Backed System of the US as heavily subsidized (p. 39), and noted the low reserves and the capital coverage of the GSE's of only 2,1% in 2002 with a falling tendency.

“... MBS involve securities which are backed by mortgages issued to homeowners that the securities holders do not know. A concern about the credit risk underlying such securities is understandable. The credible guarantees of governmental and quasi-governmental issuers provide an instant solution to that problem. However, such guarantees do not come free. The Ginnie Mae, Fannie Mae and Freddie Mac MBS programmes represent a contingent liability of the United States Government. The gross value of this subsidy is estimated to be between USD 119 and 164 billion. Calculations suggest that about 42 to 81% of the GSE market value is due to their implicit subsidy.” (UN-ECE, 2005, p. 39)

The appetite for buying Mortgage Backed Securities and other advanced securities on the financial markets was driven by investors seeking higher returns, in particular during periods of low interest rates. Different types of sub-prime mortgage backed securities were interesting for some investors, because they carried a higher yield due to their higher risk.

Observers were long alarmed by the lack of prudentiality rules of the mortgage credit industry and aberrations from standard banking practices in the GSE's (UN-ECE, 2005; Golin, 2006, etc.). Wallison pointed at government policy, which manipulated “the credit system to force more lending in support of affordable housing.” <http://www.investors.com/NewsAndAnalysis/Article.aspx?id=505924>

The warning signs also alarmed the US administration, which put forward proposals in 2003 to regulate Fannie Mae and Freddie Mac so as to counter fundamental problems, which could threaten the economy, but the majority in Congress stopped it. Due to their role growing out of control over the latest two decades, the GSE's were described by some commentators as ‘Dr. Frankenstein monsters’ (Boyle, 2010)

The Government Sponsored Enterprises of Fannie Mae and Freddie Mac were taken into federal government custody on September 8, 2008, after having suffered colossal losses. Their collapse is documented and discussed widely, see e.g., Arnold Kling's testimony before the House Committee on Oversight and Government Reform, on “The Collapse of Fannie Mae and Freddie Mac”, December, 2008.

The ‘rescue’ operation required gigantic injections of federal funds and continues to do so, as lively debated, e.g., in <http://www.allbusiness.com/specialty-businesses/minority-owned-businesses/663586-1.html>; <http://www.thefreelibrary.com/Constructing+new+affordable+goals:+in+the+spring,+the+Department+of...-a0122028728>

As a result many financial experts point to the necessity to return mortgage lending to the market (Boyle, 2010), and to reserve the role of the state in housing finance to subsidized housing segments.

Alan Boyce, 2009, testified for the House Committee, suggesting how the US mortgage market could possibly be reformed by using the securitization model applied in the Danish Mortgage finance system in reforming the US mortgage market. In this way, the discussion is full circle back to the original topic, of potential transplantation of the Danish mortgage finance system to other countries.

7.2 Elements of the Crisis in the Mortgage Finance

A Search for Explanations

There are many opinions on the role of sub-prime lending in the unrolling of the crisis, and there is no simple explanation of why the crisis happened, because “A seismic economic fracture, such as this one, does not have but a single cause” according to (Liebowitz, 2008). Some features of the larger picture can be sketched.

Jaffee (2008) orders the issues of the so-called subprime crisis and the lessons learned into three categories:

1. Issues directly and specifically relating to subprime mortgage lending
2. Issues relating to the securitization of subprime mortgages
3. Issues affecting financial markets and institutions

Jaffee (2008, p. 34) accredits the responsibility for the subprime mortgage crisis to the market participants – lenders, investors, and the credit rating agencies – because they failed to recognize that their actions relating to subprime mortgage lending were creating a house price boom that almost surely would end in a crisis. Systemic weaknesses of the mortgage system counted both the securitization process and the foundation of the Government Sponsored Enterprises, stemming from the incentive structure of off-balance securitization (Chapter A.1.7) and low capital requirements (high leveraging), combined with sliding underwriting standards.

Mortgage Backed Securities also became an investment object in the international capital market with investors seeking higher yields during a period with low basic interest rates. Without knowledge of the US mortgage market, they relied on Credit Rating Agencies, which according to Jaffee (2008, p. 5) underestimated correlated risks and house price declines. They systematically underestimated the risk on subprime mortgage pools, attributing too little weight to the likelihood of falling house prices and consequent waves of mortgage defaults. They also underestimated risks of other derived assets of a complicated nature.

Advanced financial instruments associated with Mortgage Backed Securities (Credit Default Swaps, CDS's) added to the fragility of the financial construction, when the market turned (Geanakoplos, 2010). Simultaneously, the lack of capital coverage of the largest intermediaries, the Government Sponsored Enterprises (GSEs), and the rapid expansion of riskier assets exposed the GSEs to risk, when market conditions changed (Fergusson, 2009).

Analysis of Market Composition and Defaults

After the dramatic events in the mortgage market occurred, statistics can help decipher what happened. Analysis of large datasets of the property market has been performed by a number of economists (Geanakoplos, Liebowitz, Jaffee). A reference is made below to the findings of professor Stan J. Liebowitz of the University of Texas, who has analysed the largest loan-level data source available (McDash Analytics, Lender Processing Services Inc.) comprising more than 30 million mortgages in the US (2009).

Among the commentaries to the mortgage melt down made by e.g., Lea, Hassler, Jaffee, Wallison, Liebowitz, and Geanakoplos, some observations are shared on the nature of the crisis. Some of their findings are listed and commented below.

1. Some Good Subprime Loans and some Bad Prime Loans

The crisis was not only a sub-prime crisis, because about half of all foreclosed homes had prime loans, and the foreclosure rate of prime loans grew at a higher rate than on subprime loans according to (Liebowitz, 2008), so the labeling of the crisis might be misleading.

Data show a mixed picture of the subprime and prime markets, where problems are not associated only with the borrower segment, but the subprime segment grew dramatically with an annual average growth rate of 26% from 1994 (when subprime lending was insignificant) to 2005 according to (Gramlich, 2007).

The total mortgage loans in foreclosure grew at a high speed between 2005 and 2007, from 1% in 2005 to 2% in 2007. The steep rise occurred in the third quarter of 2006, when more than 4.3 million homes went into foreclosure (Liebowitz, 2008). But delinquency rates soared in 2007 to above 15% in the conventional loan segment of the sub-prime sector indicative of worse to come in 2008.

“But the focus on subprimes ignores the widely available industry facts (reported by the Mortgage Bankers Association) that 51% of all foreclosed homes had prime loans, not subprime, and that the foreclosure rate for prime loans grew by 488% compared to a growth rate of 200% for subprime foreclosures.” (Liebowitz, 2008)

2. Higher incidents of foreclosures in ARM and IOM mortgage market segments

Discussions on the origins of the crisis have pointed to the lowering of the interest rate by the Federal Reserve as having added to the housing bubble, but analysis of the loans database suggest that a critical factor in the mortgage market was the distribution between Adjustable Rate Mortgages (ARM) loans and fixed rate mortgages, since ARM were particular sensitive to changes in the capital market, when originated in a period with extremely low interest rates. Adding to the risk factor was the share of Interest Only Mortgages (IOM). The illustrations below in Fig. C.4 (figure 6), and Fig. C.5 (figure 7), show the development of foreclosures in the subprime and the prime market respectively.

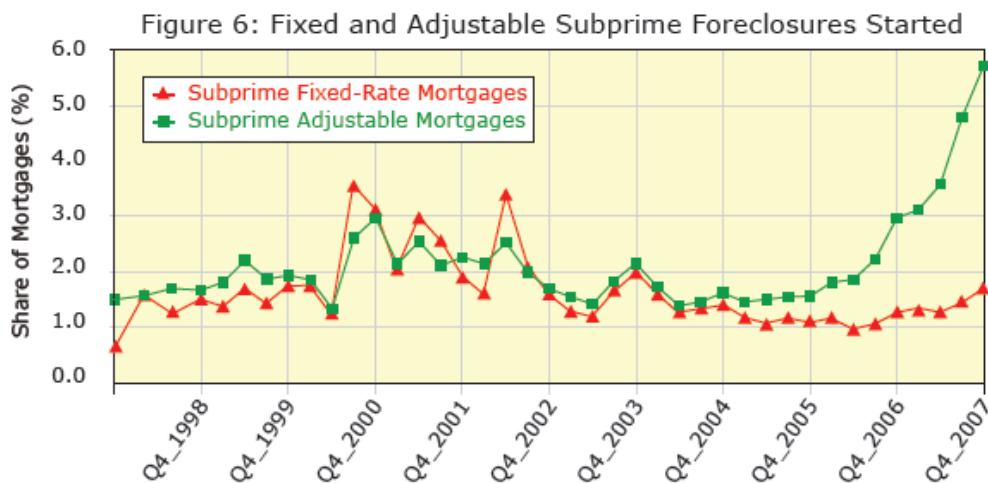


Fig. C.4. Foreclosures started, Subprime loans, fixed and adjustable rates, 1998-2007, Source: Liebowitz, 2008, p. 20, figure 6

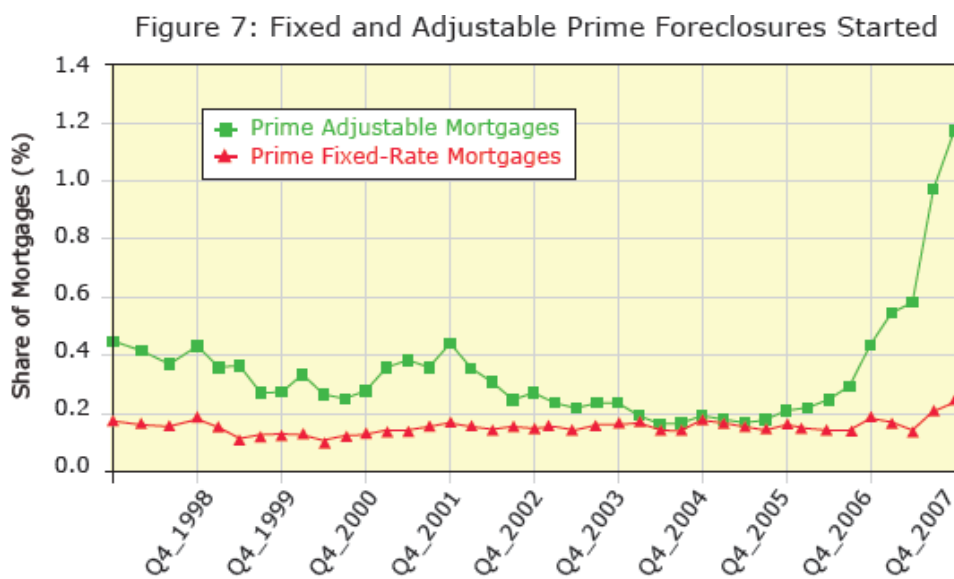


Fig. C.5. Foreclosures started, Prime loans, fixed and adjustable rates, 1998-2007, Source: Liebowitz, 2008, p. 20, figure 6

Liebowitz has shown that the distribution of loan types and defaults displays a similar pattern in the prime and subprime markets: That the default rates are significantly higher in the ARM loans than fixed rate mortgages. The pattern is explained by Liebowitz (2008, p. 5), who suggests that the ARM and IOM loans were typically selected by speculators in the property market, who wanted mortgages with minimal down payment and the lowest interest rate on the short term.

3. Determining factor for foreclosure rates: Equity at stake

In 2009 Liebowitz revised his suggestions after new analysis of the largest mortgage level database in the US. He found that foreclosures were not primarily subprime, and the main determinant for default rates was not the type of loan (ARM, or IOM), but the amount of equity.

“New Evidence on the Foreclosure Crisis Zero money down, not subprime loans, led to the mortgage”, Stan Liebowitz, 2009, <http://www.neutralsource.org/content/blog/detail/1166/>

On the basis of analysis of all different factors available, Liebowitz concludes that the determining factor for foreclosures were, if the homeowner currently has (or even had had) an important financial stake in the house.

He found an overrepresentation of homes with negative equity in the foreclosure data: only 12% of all homes had negative equity, but they constituted 47% of all foreclosures. Moreover, he analyzed if foreclosures had rather been triggered by upward adjustments of interest rates, but only 8% of foreclosures had had an interest rate reset. For this reason he concluded that teaser loans had had little impact on the crisis, despite the dubious nature of such credit.

The importance of down-payments (or LTV's in general) are supported by the analysis of Geanakoplos (2010), who connects the severity of the financial crisis with high debt leverage (low ratio between equity and outstanding debt), as discussed below. Equity at stake combined with access to recourse provides a higher level of commitment to not to walk away from debt, whereby the findings support the central importance of the so-called North-Weingast commitment mechanism. Having equity at stake is both of importance for limiting the extremes of housing bobbles, generated by high leveraging, and preventing the spreading of foreclosures, according to Geanakoplos (2010).

This view is shared by Liebowitz (2009), who states that stronger underwriting standards, especially a requirement for relatively high down payments, are required to reduce the extremes of housing price bubbles.

Rather, stronger underwriting standards are needed -- especially a requirement for relatively high down payments. If substantial down payments had been required, the housing price bubble would certainly have been smaller, if it occurred at all, and the incidence of negative equity would have been much smaller even as home prices fell. A further beneficial regulation would be a strengthening, or at least clarifying at a national level, of the recourse that mortgage lenders have if a borrower defaults. Many defaults could be mitigated if homeowners with financial resources know they can't just walk away. We are at a crossroads where we can undo the damage to the housing market by strengthening underwriting standards in a reasonable way. But to do so political leaders must face up to the actual causes of the mortgage crisis, not fictitious causes that fit political agendas and election strategies.” (Liebowitz, 2009)

For these reasons a few comments are added to the topics of underwriting and the foreclosure processes in the US, which underline their central importance for security of collateral in general.

7.3 On Collateral Security, Underwriting Standards and Foreclosure

Underwriting Standards

Wallison (2009) observed that it was a contributing factor to the crisis, that low-income borrowers received mortgage loans they could not afford, but also found that that phenomenon did not explain the problems in other market segments. Instead he saw the spreading of looser (underwriting) standards from the subprime to the prime market as a root cause, because it increased credit availability especially for speculative purposes, and pushed the steep rise in housing prices.

Wallison's position is supported e.g., by Wilcox (2009), who made an analysis of underwriting and house prices in the period from 1996-2008. Wilcox found that lowering of underwriting standards helped explain the behavior of the mortgage market and the unprecedented price boom and bust in the housing market.

Wilcox includes in his understanding of underwriting standards factors related both to credit-worthiness of applicant (FICO score), and such parameters as maximum loan-to-value (LTV) and applicants' debt-to-income (DTI) ratios (Wilcox, 2009, p. 4). Since restricted LTV are considered part of underwriting

standards, it can be seen that underwriting standards are linked to having equity at stake and thus leveraging in the mortgage market, the subject in focus of the new collateral theories of Geanakoplos (2010).

How did the lowering of underwriting standards come about is explained by Liebowitz (2008, "Anatomy of a Trainwreck"), who saw it as a result of the attempt to increase homeownership, particularly for minorities and the less affluent. The affordable housing policy induced an attack on underwriting standards by virtually every branch of government since the early 1990's, according to Liebowitz, who also observed that the trend was praised as an 'innovation' in mortgage lending by regulators, academic specialists, and housing activists. The 'affordable housing' agenda was also stimulated through the Government Sponsored Enterprises, Fannie Mae and Freddie Mac, as was explicitly formulated in modification to their charters in 1992.

The Harvard Joint Center of Housing research (JCHS) on the other side, has kept a focus on social housing issues and the 'affordability' agenda, <http://www.jchs.harvard.edu/>. One of the issues at the centre of dispute between different observers is the role of the Community Reinvestment Act.

Community organizers of minority population groups had pushed for extending credit to lower income groups and areas, and were helped by the Community Reinvestment Act (CRA) of 1977, which was reinforced in 1995. The CRA provided the legal basis for forcing financial institutions to expand mortgage lending to serve the lower income communities typically clustered in so-called red-lined districts with minority overrepresentation. In the wake of the CRA there are narratives of the excesses of some community organizers, who put pressures on banks and public entities to the point of blackmailing.

Kevin Park of the JCHS found in 2008 (Park, 2008) through an analysis of mortgage data that loans extended through banks under the provisions of the CRA accounted only for a smaller share of mortgage credit extended to low income borrowers, and that the share of loans under the CRA oversight had declined over a 15 year period. As a source of the crisis, Park pointed instead to unregulated lenders as responsible for the riskier parts of the mortgage market. In this way, Park argued that the mortgages related to the Community Reinvestment Act were not a factor in the subprime crisis.

This logic may not be in conflict with other writers, who however address the underwriting problem in broader terms, because slipping of standards can occur in many explicit and implicit manners. Liebowitz (2008, p. 4) argues that when underwriting standards fell in the sub-prime market it automatically spilled over in the prime market. An analysis of the outcome of the mortgage policies as reflected in statistics, documents an expansion of mortgage credit to riskier market segments, whether this was the result of an unregulated market or of the lack of underwriting standards in the regulated market.

"It is the thesis of this report that this large increase in defaults had been a potential problem waiting to happen for some time. The reason is that mortgage underwriting standards had been undermined by virtually every branch of the government since the early 1990s.

After the government succeeded in weakening underwriting standards, mortgages seemed to require virtually no down payment, which is the main key to the problem, but few restrictions on the size of monthly payments relative to income, little examination of credit scores, little examination of employment history, and so forth also contributed. This was exactly the government's goal." (Libowitz, 2008)

Keys et. Al (2008) provided evidence that "... existing securitization practices did adversely affect the screening incentives of lenders." In other words, a contributing factor to lax underwriting standards was the vertical dis-integration of the risk structure of the securitization process of Mortgage Backed Securities.

On the Foreclosure Process and Access to Recourse in the US

The lack of refinancing options and enforcement mechanisms to pursue debt beyond the foreclosure process undermined the motivations of many borrowers to stay on and honour their debt obligations when the market collapsed, since they could walk away from their debt. The lack of a commitment to honour debt was in particular occurring when mortgages were provided without access to recourse, meaning that borrowers could not be made personally responsible for debt beyond the value of the pledged property realized through the foreclosure process.

A study by Ghent and Kudlyaky (2009) analyzes the probability of default across the US states, where some states' laws are giving access to recourse, others not. Their analysis shows that access to recourse decreases the probability of default, when there is a substantial likelihood that a borrower has negative home equity. They found that some of the defaults registered were strategic defaults, rather than borrowers having no income. Deficient state legislation in this regard can therefore be seen as a contributing factor to the high levels of foreclosure in some states.

Foreclosure is an expensive process in the US (Geanakoplos, 2010, p. 96). Butler (2003) has documented that foreclosure time varies among states according to their procedures, but suggests a shorter time for implementation with averages between 5.1 and 9 months in foreclosure based on data from 1993 and 1996.

According to Geanakoplos it takes typically over a year (about eighteen months) from default to getting physical access to the property, and during the process value is lost. Meanwhile the defaulting borrowers have no means or incentives to maintain the property and may quit the house before the end of the foreclosure process, whereby the place is left open for decay and vandalism. Geanakoplos estimates that these homes are sold at about 25% of the price of the outstanding loan, and when foreclosures are spreading they affect the value of nearby houses negatively in a downward spiral. In other words, the foreclosure process destructs the value of assets even beyond the foreclosed properties!

In this way, the foreclosure process is not strengthening the mortgage market, but in contrary damaging the underlying assets and the property market at large.

With the huge wave of foreclosures in the US have developed organizations focused on counseling, for example the Home Ownership Protection Initiative (HOPI) in Chicago with combined goals of counseling and foreclosure prevention, http://www.nhschicago.org/downloads/82HOPI3YearReport_Jul17-06.pdf. Adding to the picture, is the emergence of anti-foreclosure movements, see e.g., <http://www.solidarity-us.org/node/2213>, including even so-called civil disobedience actions. If foreclosure is blocked by civil obedience, investors' trust in the mortgage market is further eroded.

7.4 Concluding Remarks to the US-“Sub-Prime” Crisis

Interpretation of Events and Generalization

Observations on the causes of the US- sub-prime crisis put the Danish mortgage finance system into perspective. Some of the observations could possibly have relevance when considering introducing mortgage finance systems in emerging markets.

1. Affordability is a Mis-Used Term

“Affordability” has in the US been applied as a political term, rather as a technical term. “Affordability” is a fully legitimate and noble social goal, but its application as a political term may blur what are the essential requirements for lowering the costs of mortgage credit. Since affordability is technically a ratio between housing costs and household income, both factors are of importance, and housing costs are defined by various parameters. Cheap mortgage credit alone cannot make housing affordable, if there is insufficient capacity to repay the mortgage credit. The above seems like stating the obvious, but has not been so in the latest decades in the housing market in the US.

The question is if subsidies and substandard credit standards have pushed up housing prices and contributed to the price bobble and market bust, in which case the net-effect of the “affordable housing” policy is questionable.

In other contexts the term, affordability, may also be applied indiscriminatory e.g., in documents like the UN-Habitat 2009 (<http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2642>), which is not including the price of the house.

("Housing affordability is defined by savings levels (downpayments), income with which monthly loan repayments can be made, and loan terms." (UNHABITAT, 2009, p. 17, p. 34))

Despite the indisputable good purposes of affordable housing policies, the sub-prime crisis has shown how an artificial 'affordability' concept can damage the mortgage market, and has resulted in exactly the opposite of contributing to building wealth, by exposing the most vulnerable to defaults and to losing out at first, and by having destructive effects on the overall economy.

In contrast the stringent framework of the Danish mortgage credit system with responsible lending and borrowing incentives have shielded against so high levels of defaults as have occurred in the US, when the market turned. Maintaining a strict market principle with healthy incentive structures and swift rules of foreclosure in Denmark seems instead to have contributed to lowering the cost of credit and thereby engendered a democratization of credit. Therefore, it is worth noting that housing economists have generally recommended a clear separation between market based housing and subsidized housing (ref. Renaud, Hassler, etc.).

It is concluded that 'Affordability' needs to be stringently defined in monitoring of mortgage markets, a separate and complex issue, as elaborated by e.g., Ndubueze (2007).

2. The Securitization Process and the Credibility of the MCI Matters

As the events have unrolled, the complex mortgage credit securitization process in the US market has been exposed to the results of a dis-alignment of incentives and contributed to dys-functioning of the mortgage finance system. Other factors like the lack of regulations on e.g., maximum LTV's and lack of access to recourse have also contributed to excessive lending and borrowing, a large share of which was used not for investments in housing but for refinancing and equity withdrawal.

The Government Sponsored Enterprises has been described as a gigantic "Frankenstein" monster that grew out of control (Boyle, 2010). It was essentially providing credit with public subsidies, but the institution was a shareholder company with a privatization of profit: In this way subsidies intended for the housing market ended up as private profit to investors. To make things worse the GSEs suffered from mismanagement and conducted heavy lobbying of influential politicians. The construction of Mortgage Backed Securities, and other advanced securities depended on Credit Rating Agencies, which are criticized for underestimating of correlated risks of falling property markets (Geanakoplos, Ferguson)

In contrast to the complex financial instruments in the US mortgage market, the simple, transparent and robust securitization model of the Danish system has withstood the crisis, even if there have been excesses in the Danish property and mortgage markets.

3. Security of Collateral and Commitment Mechanisms

The importance of the commitment mechanism (North-Weingast commitment mechanism), for functional mortgage credit systems has been demonstrated in the US, where lack equity and of recourse clauses (that borrowers can walk away from debt) is combined with high delinquency ratios.

Wallison (2009) argues that borrowers must have equity at stake to ensure their commitment to honour debt (ref. to the North Weingast commitment mechanism). In this way conservative LTVs are serving a double function of preventing defaults in the first place, and in case of foreclosure, increase the probability that lenders' outstanding debt will be covered.

For this reason collateral security and conservative LTV's continue to be critical for a stable mortgage and housing market. In this way the history of the Danish mortgage finance system is illustrative of the virtues of classical lending practices. However, the calculation of LTVs depends on assessments of market values and professional practices. Interconnectivity of local property markets and global capital markets leaves a heavy responsibility on the real property sector to ensure prudent practices, especially in property valuation. The implication for monitoring is to map out the full commitment processes and monitor the statistics on debt enforcement, and to ascertain best possible information for valuations.

4. Destruction of Value through the Foreclosure Process

Foreclosure processes need to be carefully monitored in screening of readiness for mortgage credit.

An inefficient foreclosure process burns up the value of assets. Geanakoplos (2010) has described how the process of foreclosure in the US may leave only 25% of the asset value at the end of the process, and how foreclosed properties impact negatively on the value of properties in their neighbourhood. These findings are in line with the results of the survey of Djankov (2008), who compared debt enforcement around the world. For these reasons, it serves all parties – and the overall economy – best to ensure effective and swift foreclosure practices.

5. The Crisis Revealed the Powerful Working of the Property Submarkets

The mortgage credit crisis revealed how the property market works, and the importance of the geographic factor. Credit risks are related to fluctuations in house prices, which again are geographically determined. Some locations and geographic areas are hit harder than others, because of employment opportunities, previous overheating of local markets, or other local factors, not to mention differences in legislation (on recourse).

This is pointing towards the importance of using disaggregated data and spatial analysis in analysis of mortgage markets, as a natural consequence of the determinants of property values and principles of valuation. Inversely, a geographic analysis may also enable identification of areas suitable for mortgage market development despite market contractions elsewhere. Profiling of potential sub-mortgage markets may call for use of disaggregated data and/or geographic analysis.

New Collateral Theories and the Financial Crisis

The financial crisis has brought to the front economists with alternative explanations of financial policies and the capital market. John Geanakoplos, James Tobin Professor of Yale University, has identified the high leverage as the root problem of the bubble and bust cycle, (<http://cowles.econ.yale.edu/faculty/geanakoplos.htm>) He has long worked on explaining markets influenced by innovative financial techniques and to understand pricing mechanisms (Whitehouse, 2009, citation below).

*"In a 2000 academic paper, Mr. Geanakoplos offered a theory. He said that when banks set margins very low, lending more against a given amount of collateral, they have a powerful effect on a specific group of investors. These are buyers, whether hedge funds or aspiring homeowners, who for various reasons place a higher value on a given type of collateral. He called them "natural buyers."
Using large amounts of borrowed money, or leverage, these buyers push up prices to extreme levels. Because those prices are far above what would make sense for investors using less borrowed money, they violate the idea of efficient markets. But if a jolt of bad news makes lenders uncertain about the immediate future, they raise margins, forcing the leveraged optimists to sell. That triggers a downward spiral as falling prices and rising margins reinforce one another. Banks can stifle the economy as they become wary of lending under any circumstances."* Mark Whitehouse, Wall Street Journal, November 4, 2009
<http://online.wsj.com/article/SB125720159912223873.html>

Geanakoplos has shown how demand and supply are determining for both interest rates and collateral rates, and in times of crisis collateral rates are far more important than interest rates in the economy.

(Geanakoplos defines collateral rates as follows: When the value of a property is 100, a mortgage is taken for 80, then the LTV is 80% and the collateral rate is $100/80 = 125\%$. The leverage is defined as the ratio of the asset value to the cash needed to buy, in this case $100/20 = 5$, (Geanakoplos, 2010, p. 102)).

Geanakoplos describes how scarce collateral is an important limiting factor, and how the economy will gradually devise ways of stretching the collateral through innovative financing techniques, which in fact means that the same collateral is backing more loans in a kind of pyramiding financial construction. The main implication of the theory developed by Geanakoplos is that when leverage goes up, asset prices go up, and when leverage goes down, asset prices go down.

Hereby, the role of collateral is put at the centre of economic theory, and although the term ‘collateral’ covers all types of assets, it is clear that since mortgage credit makes up a substantial share of all credit, mortgage finance is related directly to the overall economy.

The basic principle of pledging property as collateral for mortgage lending is a common feature among different types of housing finance. Collateral security can thus be seen as endogenous to mortgage finance, and is described as a standard e.g., by Harvey 2004, UNECE 2005, Renaud, 2008.

Collateral theory and property economics are in concordance on positioning collateral in a central role. Hereby, there is left little doubt that collateral security in mortgage finance depends on property registration and valuation. When combining these findings with the recognition by economists of the importance for economic development of property rights protection, rule of law, efficiency of enforcement, etc., strong interconnections are established between formal property regimes and economic development.

In this way the urgent need for property rights formalization calls for a revival of the land titling debate after burying oversimplifications stemming from the ‘dead capital’ debate.

8. Discussion and Generalization

8.1 On Use of Economic Methods and Analysis in the Land Sector

On Closing the Gap between Macro-Economics and Property Rights Protection

Having discussed selected extracts from economics literature, it becomes clear that 1.) modern economies are credit based, and 2.) property rights are of central importance in economics. Property rights are understood in economics as a broad concept including all types of assets, physical (movable and immovable), intellectual and financial assets. Nevertheless, real assets constitute an essential part thereof. A market economy relies on clear property rights as a precondition of exchange, and it has been shown how economists connect economic growth with access to credit based on security of collateral.

But economists are also sharp in describing the relation between the capital and the real market:

“Finance is a derivative of the real sector.” (Sheng, 1999)

Therefore economic theory and methods are of high relevance to analysis of the real property sector.

In a similar way as in economics understanding property rights branch out in different directions, as illustrated by the extremes of macro and micro level analysis.

At the macro-level future challenges in understanding the area of property rights, mortgage and housing markets are found in the domain of macro-economics, as has been shown with the monstrous forces at play in the mortgage and property markets. For this reason it does not suffice to work in the professional sphere of property rights, when studying the interface between property markets, housing and financing. The need for bridging from property rights to economics calls for multidisciplinary efforts and application of methodologies of macro-economics, which was beyond the scope of the present study.

Economists have developed models that describe the role of property rights and institutions in economic development, and have defined composite indices and monitoring systems including property rights indices. As an example, the World Economic Forum Global Competitiveness Index includes a number of dimensions of property rights and institutions, but depends entirely on perception based surveys for populating the indices presumably for lack of hard data or indicators in that domain. A review showed that the land sector produces virtually no statistics or indicators of use for such macro-economic analysis, ref. to Part B.

Use of economic methods for analysis of the land institutions and immovable property markets has long been included in development of theory in the area (Stubkjær, 2009) and has also been applied in cost studies as related to performance studies as exemplified by the COST- studies (Zevenbergen, Frank, Stubkjær, 2007). Analysis concerned modeling of transaction costs in a quest for standardization, and use of National Accounts for initial assessments. Some transaction costs data was collated for the case countries.

Still production of monitoring data on (transaction) costs in the land sector is lagging behind the demand for populating monitoring systems, just as the debate on land registration and cadastres in an operational context does not seem to be fully involving economic analysis.

On Cost Benefit Analysis and Monitoring in the Land Sector

The analysis in Part A showed that a functioning land registry is an incredibly good investment for both market participants and society at large, but there were not found cases, where a full cost-benefit analysis had been performed in connection with international assistance projects supporting institutional reform in the land sector.

When also considering the overwhelming theoretical evidence of the benefits of property rights protection and property institutions to economic development, it is suggested that the case for upgrading of land institutions could possibly be strengthened by preparation of full scale cost benefit analysis with inclusion of benefits derived from impact on the overall market, not the least the financial sector.

Scale and volume impact on the cost of credit, thus providing another weighty justification for systematic reforms in the land sector. There is not necessarily a contradiction between formalization and an equitable land policy. On the contrary, the review has indicated the high opportunity costs, especially for the poor, of *not* developing appropriate land institutions and formal land arrangements. However, benefits of reforms depend on strategies and sequencing of interventions, which could be supported by economic analysis including a broader range of factors than the direct project costs and revenues.

A Need for Monitoring of Affordability and Inequality

Economists have described mechanisms of interaction between the real and the capital markets, and how the property market and the overall economy interact in bidirectional ways.

The topic of affordability is central to development of mortgage credit, but it is important to note that affordability is a ratio between income and housing costs incl. credit costs, thus affected by a number of factors to be included in screening and monitoring (Part B, chapter 10), both on demand and supply side (including land supply).

Beyond the role of collateral security in macro-economics and in long term credit, economic literature provides evidence of the importance of other specific factors which may transmit mechanisms of change, or constitute forces of dynamics, especially

1. *Affordability of housing*, and how it depends on performance of the land sector institutions, and
2. *Inequality of land distribution*, and how it impacts on economic development.

A closer study of each of these factors confirms the importance and benefits of creating clear property rights and functioning land institutions, but also shows the complex workings of land supply through the informal sector in developing economies (Baróss, van Linden; 1990).

According to housing economists (Renaud, 2008), low affordability (a factor price ratio) is an outcome of poorly functioning institutions. In this way affordability can both been seen as a component of the incentive structure and as a measure of the outcome of the market and of institutional quality. The size of the informal housing sector in developing economies by far exceeds the formal sector for complex reasons of inefficiency, costs, survival strategies, political interests, etc., (Baross et al., 1990).

Property rights distribution and inequality shape and impact on the market in various ways.

Economists regard inequality as a source of risk (Gradstein, 2007), and a barrier to growth (Galor, 2004), or as a cause of underdevelopment (Easterly, 2007), for which reason the property rights indicators and monitoring systems need to be treating the topic of inequality in distribution of land and real assets at depth.

Observers of the history of the Danish mortgage finance system (Glud, 1951) suggest that the early introduction of the mortgage credit associations during the 19th century and the development that followed, contributed to lowering inequality in Denmark. In other cases, it has been found that formal credit contributed to increasing the wealth gap between the upper and lower market segments (MacGee, 2006).

The outlined connections between distributional issues (inequality), risks and economic development suggests a stronger role for distributional data in property indicators, just as the government or communally held land (real) assets need to be represented.

Improvements in understanding of the property market and potential for mortgage credit development could potentially be enhanced by having more detailed market data, including asset distributions both in respect to market segments of assets and to geographically segmented markets.

In this way multiple examples show the importance of monitoring affordability and inequality in the real sector, and the potential two-way linkages between mortgage finance development, affordability and inequality.

On Accountability and Monitoring of Real Assets

Financial assets are (well) accounted for in consequence of the nature of capital markets, and pricing of capital assets are continuously set in the capital market. Real assets, on the contrary, are difficult to track in most countries, despite the assets making up the largest part of a country's assets. In many countries the state or the public is the largest land owner, but often the state does not have (complete) records of its land and immovable property, or information may be inaccessible (ref. to the cases of Ghana and Nicaragua, Part D). In many cases public property valuation is long behind the real market, or deficient in coverage and contents, as illustrated by the shortage of general statistics as discussed in Part B.

The link between the financial and real assets is growing stronger with deepening of the mortgage market and with international requirements of continuous monitoring of capital coverage (Basel II-III, <http://www.bis.org/>).

When mortgage markets make up substantial parts of the capital market, the implication is a need to continuously (frequently) monitoring property values. Hereby, the real sector is put in a central position at a high level in the economy previously unfamiliar to the land sector, which has typically been focused on provision of micro-level services or rather low profile infrastructure functions. In developed economies, property registration services are generally well functioning, but that does not necessarily include delivering monitoring data to the financial sector. Even where national registers are complete, such services may not yet have been fully developed, as is the case in Denmark.

On this background it is suggested, that the new international regulations on supervision of collateral security are challenging the real property sector in developed economies by its demand for other types of services and information than were previously delivered.

In connection with mortgage finance, property rights and registration services have been discussed with a focus on the private land sector.

However, in case of a lack of accounting for public or state land assets, it is suggested that the whole sector is exposed to moral hazards. Lack of effective land administration, in particular lack of land management outside the private domain, exposes these assets to illegal activities or erosion of assets, as can be evidenced by land grabbing, illegal land settlements or simply eroding of common resources. A lack of management of public land may also be linked with deficient land delivery for urbanization.

In many countries, where land is held informally, or the systems are not well functioning, the lack of accounting for real assets result in gigantic misappropriation of common resources (robbery) at the cost of all citizens, but having relatively higher detrimental effects on the poor and powerless. In fact the public and common assets make up the largest share of assets owned by the poor – through their citizenship and as members of local communities (Haldrup, 2004). On these grounds it can be argued that a lack of titling of public land affects the credibility of land institutions in general, and management of common assets is pro-poor policy.

Accountability and Ethics

Moral hazards of the state in land management extend beyond management of the state owned resources. An incapacity to supply land for urban development, not only to the upper market segments, arrests economic development by distorting affordability through deficient supply in the market, thus leaving the only option for low income households of informal development with deprived housing standards (Baróss et al., 1990).

Having seen that dysfunctional land institutions are barring for the basic stages of economic development, responsibility for the misery needs to be sought in multiple factors at various levels in the administrative and political system.

Inefficiencies have natural explanations of a technical nature and by lack of capacity and resources available, but I would like to suggest an analysis of malfunctioning institutions also of a more ethical kind. Land professionals deal with case-by-case ethics standards, but there is little focus on macro level ethics of land institutions, and the damages to the economy incurred by malfunctioning and misdirected land institutions, despite high awareness of the destructive effects of corruption.

Professional organizations have lately progressed on defining codes of conduct (FIG, CLGE), which are essential and form the basis of all activities. However, the larger issue of moral hazards at institutional level, where the real disasters occur, e.g., through non-action or misdirected priorities, escapes attention through an individualized approach.

If parallels are drawn to financial institutions, credibility of the institutions can be questioned in case of a lack of accountability for assets, hereby casting a deep shadow over the public system as a whole, whether in property registration or planning.

Although the responsibility for mismanagement rests with the political level, land institutions constitute the hub in the executive branch, and thereby carry the professional responsibility. Professional work ethics is a mandatory component, but soliciting ethics questions down to an individual level, shadows for the gigantic scale of losses caused by systemic moral hazards of land institutions.

On the issue of checks and balances in the financial system, Sheng et al. sees three components as applied to corporate governance (Sheng et al., 2006, pp. 2-4), but these components might as well apply to land institutions:

- *Self Discipline through Ethics*,
- *Regulatory Discipline through Processes*, and
- *Market Discipline through Structures*, which involves developing internal and external institutional structures that influence the behavior of corporations.

It is suggested here that transparency and information systems could be examples of processes, that enhance regulatory discipline, and that the Danish mortgage finance system is an example of a structure having a positive impact on market discipline in accordance with the above.

In emerging economies emphasis on accountability of real assets reaches beyond the question of mortgage pledging and security of collateral on individual transactions, and strikes at the core of essentials of distribution of wealth, rule of law, and governance. Hereby these factors constitute components of the macro-level requirements defined (Part A).

In consequence it is proposed that the closer link between the real and the capital market also has implications for the accounting for real assets, which as a consequence need to better match the requirements expected in the financial world.

In conclusion, the land and immovable property sector are behind the financial sector in accounting for assets and is faced with a huge challenges of meeting the financial sector information requirements, whether in established or new mortgage market (for different reasons). A review of the needs of the financial sector might constitute a chance for revising priorities in the land sector. Here it is suggested that top-down and iterative approaches might be needed for improving accountability of real assets and for developing of monitoring functions.

Such efforts, though, can be expected to meet resistance from political interest groups who benefit from the disorder or in-transparency (Sonin, 2003; Onoma, 2009, 2010).

8.2 Discussion of Reform Strategies in the Property Markets

On Land Registration and Land Supply

Given an understanding of the workings of the interface between the real market and the credit market, it is necessary to explore how reforms in the land sector may help provide a stronger basis for mortgage finance and for economic development at large.

The criteria defined in Part A, was in the first instance intended for application as a framework for screening of readiness for mortgage credit in a given country context, as outlined in Part B. However, the review showed that little data is available for screening and rating as required in this regard. The lack of data and information is indicative of the state of affairs in the land institutions and their shortcomings in implementing formal property regimes, protection of rights, land management and information systems.

In consequence, indicators cannot be expected to be operationalized until reforms take place in implementing reforms and production of property related data.

In the meantime, it is proposed that the indicators, developed as a framework for monitoring of readiness for mortgage finance development, may also serve as a reference framework for designing reforms in the real sector. The framework offers a broader perspective yet a clear structure for defining objectives of urban reforms and prioritizing interventions. In this way it is envisioned that the framework could be helpful in developing multifaceted interventions in the urban land sector to form a stronger foundation under the real credit market and hereby contribute to economic development.

The precondition of land registration does not stand alone, as underlined by the issues of infrastructure, land supply and urban development being intertwined. The link between land institutions and physical infrastructure development is weak, when seen only from the perspective of land registration.

Rather formalization of the land sector is seen in conjunction with necessary activities in building urban infrastructure and improving (funding) of urban quality, as represented by the broad concepts of urban land governance (Enemark, et al. 2010).

What is not apparent from the suggested criteria is the inverse relation between property rights protection and level of land conflicts, which in case of a non-regulated and informal real property market can constitute a destructive force. In case of deficient land rights, the risks of pledging properties with contested rights and dormant conflicts form obstacles to mortgage pledging beyond the legal process of registration. Risks of double or plural titling - as found in the case of Nicaragua - constitute poison for mortgage pledging. Thus adjudication of property rights may therefore be the major challenge, while formal registration can be seen as simply the final act of such a process.

Since bottlenecks in supply can distort the land market with negative spill-over effect on affordability, monitoring of land supply for urbanization is important, whether provided through the private or public sector.

Baross et al. (1990) provided valuable insights into the informal land supply in development cities around the world illustrating the inverse sequencing in informal developments starting with occupation, building, servicing and finally planning. Hereby a cheaper entry was provided, and low-income families phased their expenses for housing (ibid., p.7) by incremental improvements.

Formal credit does the same thing of spreading housing expenses over a long time span, but with the benefits of enjoying better security and housing quality throughout the period.

Baróss et al. asked the question whether low standard urban development is sustained because of prevailing demand for cheaply priced plots or because property agents lack access to capital, which is needed to pre-finance infrastructure. This is an open question, and mortgage credit does not directly provide a solution to that issue, since it is only provided for final housing not for the developers. However, if the market for final housing is expanded, and the demand enhanced by formal credit, then it is supposed, that developers may also achieve easier access to intermediate finance through the banks.

In the case of Ghana it was found, that land supply for urbanization was seriously contracted for reasons of the practices in customary land administration and the lack of public interventions in land development (Arko-Adjei et al, 2010). In Ghana affordability of housing was found to be low due to bottlenecks in the land delivery mechanisms for housing, combined with a high purchasing power in the top end of the market caused e.g., by a high level of remittances (12% of GDP by 2001) (Case study, Part D). Finance cannot overcome such shortcomings, but may on the contrary exacerbate the price gap by bidding up prices on the limited supply.

In both case studies (in both NI and GH) officials or executives were identifying financing as a bottleneck in meeting their housing demand, but it is suggested here that the root causes of the problem might have to be sought in the malfunctioning land institutions. Thus slums are to be seen as a result of malfunctioning land institutions. (Note: Surveys in Ghana conducted by WEFORUM indicate that lack of financing is the prime concern among executives.)

To conclude, development of a healthy housing market is dependent on a functioning urban property market as concerns both land supply and infrastructure development, which requires due public facilitation. Management of public land resources is a critical factor in this regard. Therefore, it is proposed that accounting for land and real property under public ownership or custody, is essential for development of the property market, as also reflected in the LARA-monitoring framework (Razzaz et al., 1999(?), 2004) and in the Land Governance Assessment Framework (Deininger et al., 2010).

Bottlenecks in formalization of land rights and in land delivery for urbanization need to be overcome, in order that a positive tendency can be initiated with increasing affordability, lowering risks and increasing economics of scale in mortgage finance, resulting in stimulation of the construction industry, which can potentially function as a locomotive for growth. The construction sector constitutes a large but varying size in the economy, and is strongly related to economic growth (Renaud, 1996).

While global policy statements (WB-FIG 2010) have been formulated to broadly address the overall challenges of rapid urbanization, they do not provide answers to the how to meeting the challenge of formalization of property, and provision of property rights protection through appropriately formal systems, which are critical to mortgage pledging, and thus for development of mortgage finance in any country. The statements (FIG.45, 2010, p. 8) could be rendered contradictory or meaningless, if not clarified or substantiated. It is suggested here that the pro-poor agenda in some ways could be counterproductive, if it overshadows the need to formalize the prime sectors and state assets, which may in the end be serving the poor, as argued here.

On Diversified and Sequenced Reform Strategies in the Land Sector based on Market Analysis

It is suggested that a differentiation and segmentation of markets may help aligning policy goals and interventions in land formalization and registration of real property.

It is proposed that interventions in the land sector need to be differentiated depending on market segments and area types so as best to support the development of mortgage finance without jeopardizing other reform goals, e.g., social goals or alternative approaches needed for special areas or land tenure upgrading for reasons of the nature of the traditional tenure system.

Good examples of alternatives of socially sensitive upgrading of land tenure do not contradict the feasibility of land titling elsewhere. The FIG policy statement of 2010 (FIG publication no 45), provides strong recommendations on pro-poor and policies and securing social tenure for the poorest.

However, indirectly the poor are also affected by policies and interventions beyond their immediate neighbourhood. It is suggested that it is also pro-poor policy to regulate and formalize public and vacant land, so as to protect against land grabbing, and to ensure public role in land supply for urban development (planning) and orderly infrastructure. Titling of property rights in the middle and upper housing segments could eventually expand the tax base, and increase the volume in the formal property market and mortgage

markets, both with the potential of increasing revenues and decreasing the costs both housing and of credit, not to mention improving urban infrastructure and quality.

In particular, it is important to make a distinction in the debate on improving access to real credit according to market segments, and it is suggested here that too little attention has been given in the formalization debate to the middle market segment. In Denmark, the mortgage finance system was at first expanded and consolidated in the middle segment, while later expanded to the lower segments of the prime sector, Part A, Chapter A.5.4. The confidence built in the system and the scale of economics established helped democratize credit.

Proposals on differentiated strategies were presented by Haldrup (2004). Housing markets need to be analyzed not only by segment, but also by geographic regions (sub-areas).

A fundamental and important task awaits in extending analysis of the three topic areas to the sub-national level through an iterative information strategy, and to differentiate among sub-markets, market segments and geographic clusters in support of appropriate interventions. Each urban conglomeration may have its particular market profile and national averages conceal significant in-country variations. The leading areas could potentially be serving as a driver of development vis á vis the lagging areas also in respect to mortgage finance.

Richard T. Ely, the founder of Land Economics in the US, was fully aware of the interdisciplinary nature of land. The text book on the subject (Ely, Wehrwein, 1940) started with a chapter on demographics. I would like to suggest, that this is where to start today given the urban dynamics determining for the pressure on land and resources. A socio-demographic analysis could help sequence reforms, so that they truly contribute to growth and development.

Information Strategies in Support of Mortgage Finance Development

A great potential for future analysis of local housing and markets arises with the quantitative revolution as represented with access to statistical micro-data in time series across the world (McCaa, Ruggles, 2001). Regional analysis may not need to be performed as a geographic analysis using GIS, but disaggregated statistics alone allows segmented and differentiated analysis of local housing, demands, demographics, markets, etc. In so far as micro-statistics is available, the interplay between financing, the real market and development can be studied at depth, and findings applied for indicator development. Micro-data will also permit targeting of interventions and markets in more detailed and meaningful ways.

Other benefits can be achieved, when adding geo-statistical analysis and using land information in a Geographic Information System. In this way institutions and development can be studied from below as proposed by Pande and Udry (2005). Disaggregated statistical analysis is expected to be capable of capturing within country *institutional* variations, describing institutional qualities and contributing to a better understanding of the dynamics of demographic pressures, land and economic development.

In this way a large and urgent research agenda can be outlined for future analysis of housing and land markets in support of formalization of property rights and mortgage finance development beyond the present study.

While economists are unequivocal on the role of property rights for development, and have defined the role of property rights protection in development models (WEFORUM), there is needed clarity of concepts and models of property rights protection at the macro-economic level.

Methodologically, inspiration can be found on how macro-economists develop indicators using scarce data, and how statistical methods and micro-data can be applied to segment markets and analyze dynamics. Rather than keeping focus on single parcel data and working from details to aggregation, a change towards use of disaggregated data can provide more intelligent data, and raise the working perspective so as to match applications, e.g., in market analysis and preparation of reforms (Haldrup, 2008).

Attention to what information is required to bridge different abstraction levels might also serve well in developed economies, where availability of disaggregated statistics on real properties is limited.

In Denmark with fully protected and registered property rights, the available national statistics leaves open the question of the share of owner-occupied housing (Chapter A.9.5), gendered data on property ownership, and GINI-factors of land (real property) ownership.

ICT can facilitate such changes if applied in smart ways, or technology can constitute a barrier, if applied inappropriately and imposing unsuited standards in developing economies.

Concluding Discussion of Strategies

The above has left no doubt of the need to have formal property rights for mortgage pledging, but has left open questions on strategies. Since lack of clear titles form a limitation in development of mortgage markets in general and constitutes a constraint for introduction of the Danish Mortgage Finance system in particular, it can be asked if it is viable to develop mortgage finance based on ad hoc registration of property titles. Will the need for mortgage finance trigger an increase in the volume of ad-hoc registration of property, provided legislation is in place, and registration functions have been established?

The question is relevant e.g., in the case of Ghana where the title registry covers a relatively small section of urban properties, but where the registration services are fully functioning. Perhaps an indication can be found in the analysis provided by housing economists (Hassler, Lea, Sheng, Renaud), who regard a functioning property market and the existence of a primary mortgage market as a condition for mortgage securitization. Since the property market in Ghana is largely informal and distorted by contracted supply, the market can hardly be said to be functioning at this stage.

Transaction costs and affordability of housing are affected by the formal sector when still at an early stage of development. At first because ad-hoc title registration is more expensive than systematic titling, so that the costs per unit are substantially higher, a cost falling entirely on the individual property holder, in case of ad-hoc registration. In case of systematic titling the unit costs are significantly lower and the reform costs are typically carried by the state. Benefits of titling for society follow later, when areas are fully integrated into the formal systems of planning and taxation. The end result of ad-hoc solutions is higher costs for society and the individual land holder, resulting in lower affordability.

Volume allows economy of scale both in titling and in derived services, e.g. in finance. The question is if other conditions for mortgage finance are in place, especially other factors of affordability, a question not only of costs of credit, but also of household income.

For many reasons a situation with a small initial volume of registered properties and a limited formal sector of the property market forms a constraint for mortgage financing, and it is suggested that a critical mass might be needed to trigger mortgage market development, although the size of such a critical mass is an open question.

In response to critique that clear titles do not lead to more financing, it is proposed that a clearer distinction is to be made between rural situations and different urban segments. In rural context real property rights are about livelihoods and rural credit is distinctively different than housing finance in an urban context.

The proposition outlined here is that formal property rights is a necessary but inadequate condition for mortgage finance development, that systematic formalization strategies are necessary to create economies of scale, but they need to be sequenced and targeted in order to generate positive development dynamics. In addition there is a need to look at the housing market in a wider context with due consideration of land supply mechanisms for housing.

The Danish case has shown that land registration in an active formal property market can potentially generate abundant state revenues, even when the fee level is relatively low. But since the suitability of land titling in developing economies depends on the character of the area, it is proposed that registration strategies

have to be diversified and sequenced in due regard of both aspects. Based on the above rationale cost recovery could potentially be optimized, at the same time as the mortgage credit market is served, if reforms were to be planned and sequenced so as to take market profiles and potential revenues into consideration.

8.3 Closing Remarks on Collateral Security or Collateral Damage

The case has been argued of the pivotal role of collateral security for mortgage finance in particular, and in economic development in general.

The tight connection between the money economy and credit markets connects collateral in a broad sense with economic development to the extent that severe problems in the mortgage market transmit to the overall economy. This was demonstrated through the spreading of the so-called sub-prime crisis to the global economy. Inversely, lack of a functioning prime market of real property arrests financial development.

Property markets are trading in property *rights* and mortgage markets depend on mortgage pledging as a legal act. Development of mortgage markets is thus depending on a secure formal property regime. At specific level a mortgage pledge relies on collateral security both from a legal and value perspective, and the value of real assets depend on functioning markets.

With clear property rights intimately connected to housing and mortgage development provides an impetus to renewing the debate on land titling, which has suffered from oversimplification in the debate over ‘dead capital’ of the poor (de Soto, 2000), and has tilted towards vague representations of land tenure and governance issues, and has been influenced by anti-collateralisation arguments related to slum areas.

The debate on the property market and security of collateral has distinct features whether in the context of advanced economies with formal property rights regimes or in developing economies with widespread informality.

In developed economies the colossal power of mortgage markets is demonstrated both in growth periods and during decline.

The US-subprime crisis has illustrated the pitfalls of an artificial ‘affordable’ housing, dis-alignment of incentive structures, and credit market boosted through lowering of underwriting standards. Ironically, the classical Danish mortgage finance system, which is fully market based system, has served an affordability and equity agenda better than affordability programmes in the US, where lowing underwriting standards in housing finance have pushed the system over the brink, as argued in C.7.3.

A possible explanation of the severity of the housing bobble and bust, which has caused collateral damage to the world economy, is to be found in excesses in financial markets in constructing complex securities and of high leveraging in the mortgage market, while neglecting the cyclical nature of housing markets according to Geanakoplos (2009, 2010).

Since the land and property markets are intimately connected to the capital market, the land sector could potentially contribute to the monitoring of collateral security in respect to property asset values and property pledges by providing better, disaggregated statistics. In monitoring of the market and the economy at large indicators on equity, land and housing supply and on affordability (North, 1990) have been shown to be important factors in detecting market imbalances and institutional change.

In developing economies the lack of secure property rights, the informality of property regimes, and inadequate urban land delivery systems have been seen to hold back economic development through various mechanisms of wasted growth opportunities with negative consequences for living and housing standards.

Loss of financing opportunities

The opportunity costs of not having a functional formal property regime, includes lack of access to real credit and not benefitting from the value appreciation associated with protected property rights and title registration, not to mention lost public revenues for financing of urban development, services and infrastructure.

The controversy of collateralizing property and the debate on 'dead capital' has oversimplified the informality challenge by focusing the discussion on land titling on the poorest sections in the market, for which it might be unsuited. When there have been mis-matching goals, strategies and intervention areas in land titling activities, the discussion on increasing access to real credit can easily be derailed, and attention diverted from the market segments, where formalization is urgently required for engendering the mortgage market in support of both the primary and secondary housing market.

The collateral damage of a lack of orderly property rights and security collateral in developing economies is dramatic.

Loss of real resources and of social capital

In the first instance lack of transparent and secure property rights registration systems may result in a gigantic misappropriation of real assets, whether in the form of land grabbing or degrading of resources. Shady land deals and public land mismanagement is the breeding bed of land conflict at an even wider scale. Lack of trust in land institutions has devastating effect on behavior, when eroding respect for the law. Accountability at macro-level is therefore a precondition for the functioning of the formal land systems at more specific levels.

Loss of urban quality and housing standards

Informal housing is an insufficient and costly topsy-turvy process of urban development, resulting in low urban quality and deprived housing standards. Lack of basic infrastructure and the squandering of common resources and open space are other effects. In this way dysfunctional land institutions are a cause of miserable urban living conditions, all at the detriment of the poorest segment of the population who are least able to fend for themselves. Seen from another perspective, informal developments are providing low-income opportunities to entering the housing market, but at the price of deprived standards.

Loss of economic growth opportunities

A significant shortage of urban land supply has serious implications for the economy and society at large by decreasing affordability of housing. In Ghana the limited supply of land from the customary sector to housing shall be seen in combination with a large in-flow of remittances, which may be bidding up the price of housing, whereby housing affordability is further contracted according to Hassler (2007). In this manner the lack of an active land supply is seen to be increasing the gap between rich and poor.

When combining the above, it is clear that the lack of land supply, clear property rights and sufficient collateral causes collateral damage to the economy and to living and housing standards in developing economies. Inversely, a focused effort on adjudicating rights and expanding the formal property sector in support of mortgage finance development may set the powerful engine of the housing sector in motion, which carries promises for economic growth. While doing so parallel action is needed to address needs for different upgrading strategies of tenure security in other sectors, so that strategies are socially balanced and takes special tenure situations into account. When the formal sector and markets are expanded, revenues can be collected for investments in urban infrastructure to the benefit of all.

In this way it is suggested that well targeted strategies on regularizing the real property sector, may contribute to triggering the development mechanisms between the basic factors of economic development constituted by property rights and mortgage finance, but results cannot be expected to come quickly. Progress in housing finance development has been slow around the world, as documented by Chiquier, Hassler, and Lea (2004), because the prerequisites are demanding.

In this process economists say 'You can't skip the basics', and the basics include effective property rights (Chiquier et al., 2004, p. 33).